University of Bath

DOCTOR OF BUSINESS (DBA)

University Industry Knowledge Exchange and Academics' Professional Development

Khalid, Fahdia

Award date:
2020

Awarding institution:
University of Bath

Link to publication

Alternative formats
If you require this document in an alternative format, please contact:
openaccess@bath.ac.uk

Copyright of this thesis rests with the author. Access is subject to the above licence, if given. If no licence is specified above, original content in this thesis is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC-ND 4.0) Licence (https://creativecommons.org/licenses/by-nc-nd/4.0/). Any third-party copyright material present remains the property of its respective owner(s) and is licensed under its existing terms.

Take down policy
If you consider content within Bath's Research Portal to be in breach of UK law, please contact: openaccess@bath.ac.uk with the details. Your claim will be investigated and, where appropriate, the item will be removed from public view as soon as possible.

Download date: 05. May. 2023

DOCTOR OF BUSINESS ADMINISTRATION IN HIGHER EDUCATION MANAGEMENT

University Industry Knowledge Exchange and Academics' Professional Development

Fahdia Khalid

A thesis submitted for the degree of Doctor of Business Administration (Higher Education Management)

University of Bath School of Management

March 2020

COPYRIGHT

Attention is drawn to the fact that copyright of this thesis rests with the author. A copy of this thesis has been supplied on condition that anyone who consults it is understood to recognize that its copyright rests with the author and that they must not copy it or use material from it except as permitted by law or with the consent of the author.

This thesis may be made available for consultation within the University Library and may be photocopied or lent to other libraries for the purposes of consultation with effect from:

Signed on behalf of the Faculty/School of Management:

Dr Jack Lee (Lead) Prof John Brennan Dr Dan Davies

University Industry Knowledge Exchange and Academics' Professional Development

Abstract

Aim:

This study aims to investigate Knowledge Exchange as part of HE academics' role and if it can serve the goals of professional development for academics. The broader purpose is to evaluate the value of University Industry Knowledge Exchange (UIKE) and Professional Development (PD) functions, from academics' perspective and to investigate how these functions can facilitate academics to cope up with emerging expectations from external and internal stakeholders. Incorporating literature from Human Resource Management and Teacher Training, the study takes a deeper look at academics' professional practices and proposes a more holistic approach to PD beyond a discrete and resource intensive function.

Methodology:

The methodology chosen for this qualitative study is guided by its research question. The data was collected by carrying out twenty one-on-one semi-structured interviews of academics, selected on a pre-determined criterion. The interview guide was developed applying a rigorous three step validation process. The data analysis was carried out using Gioia's Inductive logic approach to interpretive grounded theory, where the focus had been on the in-depth analysis of the interviews to develop data structures and establishing their interrelationships. The software programme NVIVO-12 was used for data management and analysis.

Results:

A vast majority of the participants supported the idea of KE being central to their professional practice and also offering an ongoing PD opportunity. Moreover, they also agreed on the need for a more aligned and robust support system to encourage voluntary engagement in KE activities. Based on Person-Environment Fit theory, the study has concluded Six Dimensions of academic-HEI fit that can facilitate establishing an environment conducive for enhancing academics' participation in KE. The model provides six dimensions of fit three of them are at an institutional level, namely *governance-fit, strategic-fit* and *function-fit* and other three are at an individual level, namely *design-fit, HR-fit* and *development-fit*. It proposes an integrated view of PD for academics, as part of academics' job routine such as related to teaching and learning, research and other community engagement activities that in turn enhances students' experiences.

Conclusion:

An immense amount of research is already available on the topic of PD for academics which is largely based on the analysis of various formal PD activities; this research, however, contributes to the existing body of knowledge by focusing on informal and academics' driven PD function. It advocates for a

proactive, dynamic and work-integrated approach to PD function. The study investigates PD for and through UIKE activities, which is a novice perspective and provides an opportunity to contribute to the two increasingly important fields of HE studies.

The study attempts to offer a developmental view of UIKE and argues for establishing an organizational internal environment that is conducive for academics' participation in KE. The study has accounted for various forms of KE activities under one umbrella, further research can be carried out to investigate the value of each form of KE activity for PD purposes. The study has presented the HE-side of KE, further studies can be carried out incorporating the industry side of KE and its impact on their employees' professional development function, respectively.

Acknowledgements

I would like to extend a special acknowledgment to my dear advisors, family, fellows and friends; as without their support I would have not been able to complete my work. The guidance, advice and critical feedback of my supervisors, Dr. Jack Lee and Dr. John Brennan, has been enlightening my directions and progression throughout the journey. I would like to thank Professor Rajani Naidoo, Professor Robin Shield and Professor Jurgen Enders, who have shaped my approach and perspective throughout the DBA programme. I would also like to acknowledge Dr. Dan Davies and the DBA administration who have been very prompt in sorting out compliance and operational issues.

A special thanks to my research participants from Britain and Bahrain, who have provided their insights on my research area and shared their experiences and stories. I would also like to thank my colleagues, Mr. Darren Morris, Dr. Philippe Vande Wille, Dr. John Webb, Dr. Christina Georgantopoulou and Dr. Reem Al Buainain, for being a valuable source of inspiration throughout my journey.

Finally, and most importantly, I would like to extend a special thanks to my mom and dad (Mr. and Mrs. Abid Saeed) for their encouragement to be the best of myself and keep learning. They firstly encouraged me to enroll in a doctoral programme and then to complete it as early as possible. This journey would have not been possible without the support and the strength given by my beloved husband (Mr. Khalid Ismail) and my boys (Mohammed Hashir and Mohammed Ali); they had been taking care of themselves and me in the times of intense writing and data collection.

Table of Contents

Table of Figures:

List of Tables

Chapter 1: Introduction

1.1 The Purpose, Need and Brief

The higher education sector, in local and international settings, could not isolate itself from the social, cultural and economic changes that started to emerge in late 80 s of the previous century. The debate on the role of higher education institutions (HEIs) took various turns since then; HEIs are expected to perform as an economic entrepreneurial entity (as part of their third mission) along with other core responsibilities of teaching and research. The higher education sector, in many parts of the world, is influenced by internationalization, marketization, massification and of course, digitization. The HEIs are also expected to contribute towards economic sustainability and perform their entrepreneurial role in the growing knowledge ecosystem. The changes in the external environment has influenced HEIs on a strategic level and has impacted their organizational structures. Managerialism, competitiveness, and business orientation of HEIs have impacted the roles and responsibilities of employees in these HEIs. It resulted in not only emergence of new job titles but also changing many job-descriptions; the changing landscape of HEIs changed the expectations from its employees including academics (Potgieter et al., 2011) and non-academics.

The HEIs' centripetal position (Khalid, 2017a) in Knowledge ecosystem implies changes in the expected role of academics as well. The academics are expected to apply modern teaching tools and techniques, excel in research, manage students' progression and actively take part in community engagement projects such as knowledge exchange activities. The changes in expectations call for re-skilling, upskilling and encouraging the HEIs' employees, including academics, to adapt to these changes. The common understanding of academics being the experts in their subject fields, does not fade the need for continues professional development and remains relevant for both experienced and early career academics. The increasing complexity of the operating environment and intertwined job roles requires revisiting academics' job design and professional development programmes that has means to update and upgrade itself to suit the changing needs of academics' job roles. On the contrary, subjecting financial constraints it is challenging for HEIs to spare resources and academics' time for such professional development and job analysis activities, as much as needed.

This study aims to capture the changing role of academics and how they can be prepared for that role. It aims to investigate Knowledge Exchange as part of academics' changing role and if it can serve the goals of professional development for academics. The broader purpose is to investigate the value of Knowledge Exchange (KE) and Professional Development (PD) functions, from the academics' perspective and to also investigate how these functions can facilitate academics to cope up with emerging expectations from external and internal stakeholders. The study focuses on PD as part and parcel of an academic's working routine, it takes a deeper look at academics' professional practices and proposes a more holistic approach to PD rather than a discrete and resource intensive PD function. It takes a deeper look at PD for academics while performing academics practices such as related to teaching and learning, research and other KE activities that in turn enhances students' experiences (Guskey, 2000), in various direct and indirect manners. PD is characterized by activities and

interventions enhancing academics' skills, knowledge and competencies that are required to meet the short- and long-term strategic goals of the organization (Stewart and Rigg, 2011, p. 30).

There is an immense amount of research already available on the topic of PD but they are often based on a formal PD (Jacob et al., 2019) function; this research, however, contributes to the existing body of knowledge by further focusing on informal, academic driven PD and most prominently investigating PD for and through university industry Knowledge Exchange (KE) activities. Professional Development in higher education is a multi variate case because of various reasons. Firstly, the fact that human development is what HE does, it enhances skills and knowledge of existing and future workforce. PD is about offering the development for their own workforce so that they can perform the responsibility of developing the nation. Secondly, most of the HEIs have an internal unit for teachers' training and development that is largely focused on the teaching and learning only such as, pedagogy, course development and curriculum improvement; revamping this internal function is needed to cope up with the changing academic role and inclusion of other areas of professional practice. Thirdly, the fact that the development function that is carried under the human resources department of the HE, is very much oriented towards administrative tasks rather than professional development; it is targeted more towards compliance and quantifying the development function. A few examples of such are, accounting for number of PhD holders, number of mandatory learning hours, cost of a development intervention per employee etc. Such measurements sometimes undermine the quality and purpose of the PD function. Fourthly, the people development that HE institutions are ought to do, is inspired by government and industry needs and influenced by national and international perspectives on development. In presence of such a wide range of extraneous factors, research on PD remains relevant and needed (De Rijdt et al., 2016; Tyagi et al., 2017; Sutherland, 2018; Sutherland and Hall, 2018). This study has focused on KE as it is one of the emerging ways of academic engagement in society and offers opportunities for further research (Perkmann et.al, 2013, p. 423). The purpose is to bring attention to informal and cost-effective PD initiatives that can equip academics to perform their dynamic role. In the era of financial sustainability concerns, this study can significantly contribute towards developing cost-effective and holistic framework to integrate PD (Sutherland, 2018; Sutherland and Hall, 2018) and KE.

Although, it is acknowledged that all employees, working in an HEI, are highly important and they have their own PD needs; this study cannot encompass the entire set of work roles in an HEI and is scoped to investigate PD and expectations from academics' perspective, only. With the understanding of changing job identities and third space professionals (Whitchurch, 2009) this study aims to facilitate in understanding the value of PD and its revamping for non-academics as well.

1.2 The Research Goals and Questions

The purpose of this study is to gain an understanding of how universities can revamp their professional development function by integrating knowledge exchange, equipping academics to develop graduates for industry 4.0 and to cope up with all aspects of their changing roles. This research is, firstly, aimed at analyzing KE, as a developmental and learning opportunity. Secondly, it is aimed at capturing academics' perspective on enhancing their participation in the KE activities, providing an ongoing PD opportunity.

The study reviews PD for academics from human resource management and teacher education perspective.

The research goals are to:

1. Develop a better understanding of the changing needs and value of professional development from the academics' perspective.
2. Develop a better understanding of how and why academics engage in professional development.
3. Develop a better understanding of how and why academics engage in knowledge exchange and how it brings nuance to their professional practice, if so.
4. Develop a theoretical understanding and evaluate the circumstances that promote academics' development while participating in KE activities.
5. Identify possibilities to enhance the impact of Knowledge Exchange on academics' professional development such as by enriching learning and knowledge construction experiences.
6. Investigate challenges and potentials for further development of KE as a means for academics' professional development.
7. Make recommendations on how KE, research and other professional practices can holistically facilitate the changing role of academics.

The overarching research question is:

How does university industry knowledge exchange attract/encourage greater participation among academics and facilitate their professional development?

It is further categorized into the following sub questions:

- RQ1: How do academics value professional development as the role of higher education changes in the context of the industry revolution 4.0?
- RQ2: How does participation in university industry knowledge exchange shape the professional practices of academics in higher education?
- RQ3: How is participation in KE regarded/ formalized as a professional development initiative?
- RQ4: How academics can be encouraged to engage in KE activities?

The investigation in this research is driven by above research question and has helped achieving the researcher's goals. Table:1 indicates the mapping between the sub research questions and the goals of the study. Firstly, it has collated a perspective on the changing job roles of academics and the need for a versatile PD function to continuously prepare them for such a broader role, which is aligned to the study objectives 1 and 2. Secondly, it has evaluated KE as part of academics' changing job role and investigated KE as an ongoing learning and developmental opportunity which is aligned to the study objectives 3 and 4. The study goals 5 and 6 are achieved by investigation for third research question and the last research question is developed to achieve seventh study goal which is around presenting a

holistic view of academics role with KE being central to the new role and how participation in KE can be encouraged.

The focus of this study is on understanding existing professional development practices, how academics value them in preparing for their current professional practices and future role, understanding what PD initiatives are less valuable and why, identifying changes needed in professional development functions, how and what characteristics knowledge exchange demonstrates to be regarded as a PD opportunity, how academics perceive KE and how it is linked to other professional practices they perform.

This study has tried proposing a more holistic approach to describe KE for academics, incorporating teaching and learning, research, industry engagement where PD becomes a part of academics' professional routine. It suggests looking at Knowledge Exchange as a PD activity and how academics' participation can be enhanced in KE. This study is conducted in the geographical context of British and Bahrain, however, it does not aim to offer a comparative and cross-national analysis. It includes UK-HE as one of the sophisticated and pioneering HE systems in the world and Bahrain HE as an example of emerging and developing system that has incorporated UK HE procedures and practices, and benchmark UK-HE on various developments (further explained in chapter 2). The study incorporates experiences and perspectives of academics representing various nationalities and targets professional development at individual level that can contribute to shape the institutional policy and people development philosophy.

Table 1: The Mapping Scorecard of Study Goals and Research Questions

Research sub Questions (RQ)	Researcher's Study Goals
RQ 1: How do academics value professional development as the role of higher education changes in the context of the industry revolution 4.0?	1. Develop a better understanding of the changing needs and value of professional development from the academics' perspective. 2. Develop a better understanding of how and why academics engage in professional development.
RQ 2: How does participation in university industry knowledge exchange shape the professional practices of academics in higher education?	3. Develop a better understanding of how and why academics engage in knowledge exchange and how it brings nuance to their professional practice, if so. 4. Develop a theoretical understanding and evaluate the circumstances that promote academics' development while participating in KE activities.

RQ 3: How is participation in KE regarded/ formalized as a professional development initiative?	5. Identify possibilities to enhance the impact of Knowledge Exchange on academics' professional development such as by enriching learning and knowledge construction experiences. 6. Investigate challenges and potentials for further development of KE as a means for academics' professional development.
RD 4: How academics can be encouraged to engage in KE?	7. Make recommendations on how KE, research and other professional practices can be viewed holistically.

1.3 The Thesis Outline

The thesis is written in compliance with rules and regulations provided by University of Bath, addressing integrity and authenticity concerns. The overall structure is as follows:

Chapter 1: Introduction presents the brief overview of the thesis. The brief on the context is provided followed by the problem statement inclusive of the research questions and objectives. It is argued that in the changing context for higher education institutions, role of academics is also changing which require rethinking the professional development of academics. It then argues exploring a holistic approach to PD by incorporating it in KE activities. After this, the contribution of this study is argued by clearly identifying the purpose it is aimed to serve.

Chapter 2: The Background and Context details the background of the thesis and contextual settings in which this research is done. This research is placed in the higher education system in the UK and Bahrain, one of its old colonies where HE is relatively new and very much informed and influenced by the UK-HE. It unfolds academics' role by discussing excellence in higher education through the teaching excellence framework, research excellence framework and the concept of knowledge exchange framework. It provides the background of higher education in Bahrain and how it is sustained on UK higher education system. It finally represents the link between the contextual settings, research question and the thesis.

Chapter 3: Literature Review provides a systemic narrative literature review (Tanfield et al., 2003), it does so by capturing evolution and current situation on knowledge exchange and academics' professional development. Most of the literature review is on the publications in the period of last ten years; moreover, the key literature from previous century is also included, particularly on the fundamentals of the novice concepts in the fields of knowledge exchange, employee development, learning process, changing role of higher education and innovation in the regime of university-industry

collaboration. The first part of the literature highlights professional development (PD), different forms and evaluation of PD and captures the recent employee development activities for academics in high education; it reviews employee development and continues learning for both new academics and senior academics. The literature review then unpacks the concept of knowledge exchange by incorporating definitions, frameworks and theories from various academic and professional sources. The literature is reviewed to conclude a definition/framework on KE, for this study. The third part of the literature looks deep into the outcomes of knowledge exchange and highlights the literature that argues for the academics' professional development as one of the prominent outcomes of the university-industry KE activities. The chapter also presents a review on models of institutional governance along with Person-Environment Fit theory that is been deployed in the data analysis and evaluation phase.

Chapter 4: Research Design discusses the research methods and methodology deployed to carry out this research project. It first highlights the theoretical underpinning principles of the research followed by rationale to choose the qualitative research design and interview technique. The chapter represents the research design, process of developing the research guide, instrument validation and reliability. The last section of the chapter represents the approach to data analysis and how NVIVO-tool was used to reduce data and develop a theoretical framework.

Chapter 5: Findings represents the findings from the analysis of the data collected. It represents the findings into themes that are emerged in the analysis. It provided continuous references to the quotations from the data. It explains the recurring themes in the findings and their link to explain the interplay between university-industry knowledge exchange and academics' professional development.

Chapter 6: Discussion examines the themes, that are abstracted through findings and represents them in the light of existing literature to argue the relevance to the theme/model and how it relates to the objectives of this research.

Chapter 7: Conclusion consolidates the thesis and represents potential application of the study in the fields of academic development and university industry knowledge exchange. The study represents a novice yet holistic approach to both agendas and highlights the directions for the future research.

Chapter 2: The Background and Context

2.1 Introduction

The HEIs, are knowledge intensive organizations and heavily depend upon the specialist knowledge and skills to continue to meet their objectives. In the changing regime of expectations, academics are the key players; HEIs rely on academics' intellectual capabilities and strategic awareness towards people development, innovation and financial sustainability; nevertheless, it poses a hybrid and complex fields of exploration on the intertwined relation among them (Ulrichsen, 2018). As the academics' job design is transitioning, the importance of professional development is also gaining attention. Academics, from early career to senior levels, require support in adapting to the evolving context.

This study is conducted in the locational settings of British and Bahrain. The aim is to capture perspectives on PD function from a sustained HE context as well as from an emerging HE context. The HE in the UK represents the advancements in HE that are pillared on the legendry HE-systems; Bahrain HE represents an emerging system where UK inspired advancements have shaped the PD for academics. It is important to note that it is not a comparative study on PD and KE practices applied in these two locations, nor it attempts to present recommendations from one context to another. Following the research question, *How does university industry knowledge exchange attract/encourage greater participation among academics and facilitate their professional development?* this study aims to collect perspectives from two locations to provide a wider range of responses, enriching data analysis and a deeper insight to contribute towards existing knowledge and practice.

To understand the need for a different view on professional development, it is firstly important to look at the context and understand the technicalities, which also provide a background to this research project. This chapter is aimed at establishing an understanding of HE in the UK and Bahrain and providing a frame of reference to further perceive this research study. This chapter is divided into three parts, first section summarizes the macro level factors transforming HE in general and UK HE in particular. The second section summarizes how these environmental factors are translated to UK-HEIs and academics. It unpacks the three policy-driven frameworks namely HEA-teaching excellence, Research Excellence Framework and Knowledge Exchange Framework. The third section summarizes HE in Bahrain and how it offers an example of emerging HE contexts and relevance of this research. The last section concludes the chapter by relating the two contexts and identifying the link to this research. It is important to note that this research is not about solving a contextual problem but about enhancing understanding on the phenomena of professional development and knowledge exchange in the current times of knowledge-driven, innovation inspired economies. The locational contexts are to provide anchors for data collection and policy analysis.

2.2 Transformation in Higher Education and Factors affecting the Changing Landscape of Higher Education in the UK

The role of HE is often described as three main functions of teaching and learning, research and third mission which is the community contribution. Over the past few decades, changes in the societal, technological, economic and political environments have transformed the role of HE. HEIs started to recognize their strategic position, as a social and economic actor and an intellectual capital powerhouse (Khalid, 2017c).

2.2.1 Emergence of Knowledge-Driven Economy and Transformation in HE

From steam engines to industrial revolution 4.0, mankind has invented technologies and instruments for their prosperity. There was a time when physical and tangible assets such as equipment, machines and technological infrastructure were considered the instruments for competitiveness. However, now knowledge, artificial intelligence and innovation has taken over and are regarded as sources of competitiveness. The role of HE and HEIs still remains a current topic (Devlin, 2020). Nations and industries have realized the dependence on knowledge for economic progress and how sharing and creating new knowledge can provide strategic edge in this highly competitive world. This accelerated the needed research on the topics of knowledge-society, knowledge eco-system and knowledge driven economies. The goal of knowledge economy is human development (UNESCO, 2005). The knowledge ecosystem perspective gave HE a central position in the understanding of knowledge ecosystem, as it is about developing people and enhancing their competencies and professional practice (Nahapiet and Ghoshal, 1998, p. 245). This brought a shift in understanding the HE research function from extending the body of knowledge, in a subject field, to a more vital and significant role of innovation and problem solving via more applied, collaborative and fast paced research. This of course, brought changes in the job specifications and job descriptions of academics.

2.2.2 Changes in the Governance and Financial Support System

Transformation in higher education is also attributed to the changes in the governance and financial support system for HE (McMillan Group, 2016; Reichert, 2019). The HEIs in these settings, such as in UK, are expected to be self-sufficient and continue to maintain sustainable sources of funding for their survival (Universitiesuk.ac.uk, 2020). This is often discussed as ‘entrepreneurial university’ (D'este & Perkmann, 2011) and the triple-helix model (Etzkowitz & Zhou, 2017) of the role of higher education in the society. In many parts of the world including UK, HEIs have exhibited a remarkable growth in this sector. HEIs provide knowledge spillovers, patents and other training and development services to the industry and society and earn revenues. The question then arises is to what extent the academics are prepared to perform this entrepreneurial role to contribute towards financial sustainability of the HEIs and hence stakeholders’ expectations.

2.2.3 The Changing Employment Landscape and Emphasis on The Workforce for The Future

Automation, artificial intelligence and other technological advancements represents another angle of changing expectations on HE, i.e, around developing industry-ready talent for future. The technological advancements and scale of global transactions have revolutionized the business models and hence the employment landscape in the developing and developed countries. It has disseminated the job designs and created new jobs. Some of the jobs that are high in demand now, were never existed half a century ago. On the global landscape, according to World Economic Forum (2016), 7.1 million jobs will be lost that are mostly related to white collar office affairs and 2 million jobs will be gained in computer and other hard sciences. According to Barthel et al. (2016), current demographic trends project the need of 600 million jobs over the next 15 years. On the contrary, many large companies, across the world, still consider finding the right talent and agenda of skill gap as one of the key labor market issues (Talent management: responding to uncertainty IES Perspectives on HR, 2017). The high unemployment rates coupled with increasing number of graduates entering the labour market adds insult to injury. This indicates yet another responsibility on HE and academics to shape their curricula, teaching and learning and student engagement activities to enhance graduates' work readiness and employability. This, nevertheless, poses the need for preparing academics and equipping them with right competencies, knowledge and skills to allow them performing the changed job roles.

2.2.4 HE and Engagement in Global, Regional and Local Relationships

Another demand for HEIs is in the form of active engagement in global, regional, and local relationships. Globalization of HE and internationalization of HEIs are the means to achieve those ends (Marginson and Rhoades, 2002). HE cannot divorce itself from its political role in the international relations. HEIs are going international and diversifying, in the form of their students and staff representation, curriculum development and program offerings (Khalid, 2017c). However, on the other hand, they cannot be spared from the aftereffects of regionalization and political ties within key economic players of the world. The political scenarios ask for adaptability and promptness from higher education. Such scenarios include, Brexit, America-China, Arab world's relation with United Kingdom and United states and other relations that governed by supranational entities such as UNESCO and UNICEF. These external factors imply operational challenges in the HEIs governance that can be spontaneous and sometimes, unpredictable. HEIs are directly and indirectly influenced by the changing context, it offers opportunities for new research areas, new study programmes and as well as exposure to the new markets. However, it also requires upskilling, re-skilling and preparing talent within HEIs that would require reforms in the professional development function for academics.

2.2.5 The Changing Role of Academics:

These macro level transformations have also brought changes in expectations from academics in HE. The academics are expected to exhibit a unique and unprecedented set of competencies (Potgieter et al., 2011); such as 'client focus, negotiation, project management, understanding stakeholders, strategic thinking' (p. 89); their job design is changing on the principles of 'private and corporate sector' (p. 87).

Sutherland (2018) narrates “Academic staff starting university jobs in 2018 can expect, at different stages during their academic careers, to undertake the roles of teacher, researcher, administrator, manager, leader, entrepreneur, academic/community/corporate citizen, industry liaison, recruiter, fundraiser, and many more” (p. 267). She identifies the role of academics under four categories of Learning and Teaching, Research, External Engagement, and Leadership and emphasizes the need for PD in all four areas (p. 267). She also recognizes the need for a more holistic and academic-led approach rather than a top-down, pre-set programmes, especially for the ongoing PD for academics (p. 270) which is further investigated in this research project.

2.3 A Preview of These Factors In UK-HE:

The UK HE system, like many other HE systems across the globe, is also influenced by the regime of expectations discussed above, and is also thriving to increase KE activities. The nation, industry and government are well aware of the dependence on knowledge and innovation for economic growth and financial sustainability (Universitiesuk.ac.uk, 2020). The UK HE and its stakeholders, like many other developed and developing countries, highly value the link between human capital development, health of knowledge-driven economies and what it implies to the changing role of HEIs. Recently, UK Research and Innovation (UKRI) sponsored Knowledge Exchange 2020 awards (praxisauril.org.uk, 2020) with the aim to encourage sense of shared vision among HEIs, Government and private businesses towards engagement and collaboration for KE. UK government expects and encourages HEIs to actively engage in KE not only from the financial sustainability point of view but also from the view point of knowledge sharing and contributing towards business communities. There is also a shared understanding that the knowledge flows in two-ways and universities and industries learn from each other hence contributing to economic and people development goals (Zhang, 2018). Research England, as part of UKRI, works with UK higher education sector and provides a unified platform for research, learning and innovation (Knowledge exchange - Research England, 2020). Under the umbrella of UK Government’s Industrial Strategy and aim to spend 2.4% of GDP on research and development projects, Knowledge Exchange Framework is expected to provide a unified frame of reference to various stakeholders (Knowledge exchange - Research England, 2020). In order to investigate the impact of KE activities on students’ learning, a funding to 10 million pounds is released to UK HEIs (Emri, 2020) , this not only indicates the stakeholders’ awareness towards the link between students learning experiences and KE but also reinforce the level of accountability for institutions, on the agenda of KE and its gains for students and researchers. The KEF is underway and discussed in the following section. The universities are expected to implement the guidelines provided in Knowledge Exchange Concordat that will facilitate institutional management and governance in monitoring, evaluating and acknowledging KE-activities at the institution level. Professor Trevor McMillan, the chair Research England KE Framework Steering Group and UUK/Research England KE Concordat Task and Finish Group, explains the significance of Concordat:

“The aim of this concordat is therefore to give universities and their staff and students clarity of mission and to support their development, give partners an accurate representation of the approach that

individual universities are taking to KE, provide clear indicators of their approaches to performance improvement, and give our governing bodies and government broad confidence in the activity that is taking place in universities. It also aims to stress how collaboration between universities and partners in various aspects of KE can be beneficial to all participants" (McMillan, 2020).

The UK universities themselves, value KE as an integrated and synergized platform allowing them to not only collaborate with business and society but also offer immense amount of benefits to students ranging from enhancing employability, experiential learning and inclusive students' participation (Emri, 2020). The HEIs in the UK are increasingly emphasizing on KE and equally understand its implications on the academics' role. This emphasis is not only a reaction to requirements for funding and pressures from external environment but also because of a drive from within. Many HEIs and academics perceive KE as always been a part of their professional practice as research and community engagement. Nevertheless, reporting and publishing on KE has become one of the priority areas (Emri, 2020) for UK-HEIs. The influence of governmental, societal, and economic expectations, on the HEIs and in turn on academics is described by three operating models from the UK HE system, that are discussed here.

2.4 The Relevant Benchmarking Frameworks for Higher Education in the UK

The HEIs are considered central to the knowledge and innovation ecosystem (Ulrichsen, 2018 , p. 4). The HEIs are expected to perform in collaboration with and as research centers, exploring trends and enhancing knowledge; and innovation hubs, continuously interrogating to solve existing and projected problems; parallel to this they are considered the powerhouse of providing skills for future (AACSB International, 2011, p.14); (Acs et al., 2009). With many transformation indicators, as discussed above, marketization and other external factors have also influenced UK HE at multiple levels. In the UK, like many other parts of the world, Knowledge exchange is regarded as a growingly important strategic function. The HEIs in the UK are expected to collaborate with non-academic partners and provide commercial, educational and economic benefits to its stakeholders (McMillan, 2019). The UK Government, under its strategic agenda of 'Britain Fit for the Future' (HM Government, 2017) expects universities to actively engage and initiate KE projects. The UK universities are also expected to maintain a source of funding for their survival (Universitiesuk.ac.uk, 2020). Moreover, with economies and businesses, following the direction of Open Innovation, imply a more active and rigorous role of UK HEIs and academics in KE activities (Striukova and Rayna, 2015). The growing demand from such transitions in the UK HE external environment poses challenges and potential confusion for various stakeholders. Universities UK (2019) published a concordat with the aim to provide clarity to staff, students and other stakeholders regarding various approaches of HEIs to KE.

The UK HE system, however, has continued to demonstrate its long-standing commitment to excellence by keeping up the legacy of quality, research and development. HEIs, in the UK, follow a systemic benchmarking framework to continually monitor their progression at individual and institutional level. Such initiatives can be captured by discussing, higher education academy framework, research

excellence framework and knowledge exchange framework (Jackson, 2018, p. 68). With some related activities among the three, these frameworks are largely about teaching, research and knowledge exchange, respectively.

2.4.1 Higher Education Academy (HEA) Professional Standards Framework

With 111,000 fellowship holders and counting, HEA professional development framework is widely used to demonstrate commitment to professional development at both individual and institutional level (Fellowship | Advance HE, 2019). HEA fellowship is known to demonstrate and report enhancement in professional practice in the UK (University of Strathclyde, n.d) and many parts of the world such as Australia, America, Saudi Arabia and Bahrain (HEA, 2017).

Higher Education Academy (HEA) professional standards framework [Fig. 2] maps academics professional practice into three categories of core knowledge, professional values and areas of activity. It provides a uniform frame of reference to academics and institutions to demonstrate the wide spread of activities performed by academics enhancing their own, peers and students learning. It allows academics to reflect, review and report their continuous professional development and practices. The three dimensions are represented by 15 sub-indicators; a compliant reporting to which concludes with the fellowship status of associate fellow, fellow, senior fellow or principal fellow.

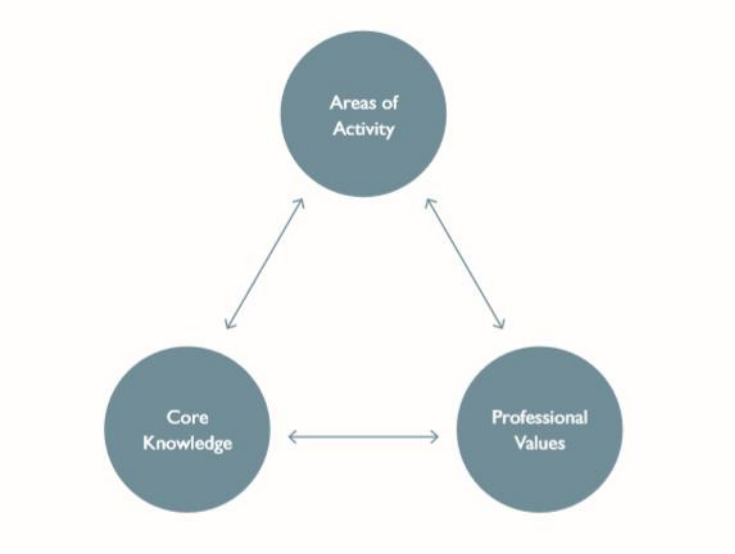


Figure 1: HEA-framework for teaching and supporting learning.

2.4.2 Research Excellence Framework REF2021

Pioneered on the idea of research for impact, REF is a framework for institutional review of research excellence. Since its first implementation in 2014, reforms have been introduced to prepare for the next assessment cycle due in 2020. With a total of 34 units of assessment, REF assesses excellence on three categories of outputs (60%), impact (25%) and environment (15%). It acknowledges case studies of impact, scholarly outputs and research doctoral degrees awarded as a few evidence types for data (England, 2019). The REF is very much based on the idea of value driven research, as it incorporates international standards for research as well as its impact on the world outside academia. REF also enables institutions in documenting their performance as a facilitator in sustaining an environment that is conducive for knowledge, people and social development. The next round of submissions will arrive in November 2020.

2.4.3 Forthcoming Knowledge Exchange Framework (KEF)

Parallel to the functions of teaching and learning and research, HEIs' third mission of community engagement is of equal significance. HEIs' collaboration with industry has gotten significance over the past couple of decades. Often described as, university industry knowledge exchange, it is one of the main-stream initiatives that allows HEIs to continue to engage with community, progress research, carry out teaching and learning function and earn revenues at the same time. Higher education institutes have been working in collaboration with Govt. and Industry on various levels and intensity. The use of KE framework would provide a comprehensive and comparative source of information for future planning and decision-making processes (KEF: showing excellence in a framework? - HEPI, 2020). KE serves as a source of funding and financial sustainability. HEIs are expected to collaborate with industry for research and innovation, which is done in multiple formats such as consultancy, licensing, intellectual property and collaborative research. The KEF, under development, aims to capture KE in wider seven perspectives that are as follows:

- Research partnerships
- Working with business
- Working with the public and third sector
- Skills, enterprise and entrepreneurship
- Local growth and regeneration
- IP and commercialization
- Public and community engagement
  (Knowledge Exchange Framework Consultation, 2019, p. 8)

The British Government, industry, and HE sector regard KE as a pillar in building the country for the future (HM Government, 2017). The Higher Education Funding Council for England (HEFCE) under the government's strategic agenda of 'Britain Fit for the Future' had been working on developing university industry knowledge exchange framework. Although HEFCE is now dissolved into UK-Research and Innovation and Office for Students (GOV.UK, 2018), but the work on KEF is progressing. One of the objectives of developing the framework is to ensure that entities and individuals involved are at the same page and fully aware of the direction, roles and expectations from each other. Although the

framework and establishment of metrics is still under consultation process. There is a good understanding among the participants on the greater and central involvement of academics from higher education. KEF, like the REF, is an institutional level exercise; however, it is also well understood that it would require some sort of internal planning, execution and reporting, at an individual academic level, as well. With the very basic meaning of the term 'exchange' it can be argued that it is a two-way process of gaining/ sharing knowledge (Zhang, 2018).

2.5 Emerging Higher Education in Bahrain

2.5.1 International orientation of Bahrain:

Bahrain is an island in the Arabian Gulf. It is one of the British colonies that was recognized as an independent kingdom in 1940. Enriched with natural resources of oil, gas and aluminum, Bahrain has always been supported by regional and international entities to shape its regulatory, economic and social structures. With the population comprising of 51% non-Nationals and a workforce with 79% foreign workers (Bahrain Labour Market Indicators, 2019), Bahrain's local businesses and regulatory environment are very much international oriented and follow global standards. Although, Bahrain is an independent entity its policy making, and regulatory environment is influenced by international and regional actors.

2.5.2 HE in Bahrain

The HE is relatively young in Bahrain; its pioneering public university, University of Bahrain, is approximately 35 years old. Some private/ semi-private HEIs started to emerge in the first decade of this century and some international professional programmes have been introduced since then. According to Secretariat General of the Higher Education Council, the HE in Bahrain includes three government, one regional and thirteen private HE institutions this includes two international HE providers from America and UK, who recently joined the HE sector. In an approximate 1.6 million of population, with more than 56% in the in working age bracket and 15.65% in early working age (Bahrain Age structure - Demographics, 2020; Population of Bahrain, 2020), the population has a growing demand for higher education to support the growing young population and Government's efforts to raise youth employment.

2.5.3 National HE strategy and University Industry collaboration

Standing 47th in the world on the human capital index, Bahraini government is committed to improve their HE system to provide ample opportunities to develop their future workforce. Inspired with the vision 2030, Bahrain HE aims to position itself as a regional hub for quality HE (EDB, 2008) and has invested in reforming education and particularly HE systems in Bahrain. According of national HE strategy 2014-2024, the focus of collaboration with industry is largely around developing work-ready graduates and preparing youth for the current and future job roles (Higher Education Commission, 2014). Moreover, integrating entrepreneurship in HE is largely aimed at preparing and facilitating graduates for entrepreneurial role in society and university-industry interface is highly valued for youth skill development. The HE-Bahrain believed in continuous consultation with industry, government, and

other stakeholders for programme approvals, course development and learning about labour market needs. However, when it comes to Knowledge Exchange policies and practices, it is still at its initial stage of conception. The University of Bahrain, the only public university in Bahrain, acknowledges the need to engage in knowledge transfer and knowledge exchange activities at a strategic level and inspires to sustain it in future policy making (University of Bahrain, 2016). Although concept of KE in Bahrain, is at a very early stages of its inception both at policy making and implementation level, it is noticeable that readiness for worldwide partnerships and commitment to innovation is very much ingrained in this emerging HE context.

2.5.4 UK and Bahrain

UK has been forefront in facilitating transformation in Bahrain, including its education system. Even after the independence, British continued to advise Bahrain in establishing its institutions. The prominent presence of Britain can be felt at both formal and informal levels. The British Council started its functions in 1948 (About us | British Council, 2020), The British Club (1949), Bahrain British Forum 1995 (About | Bahrain British Business Forum, 2020) the British School of Bahrain 1995 (British School of Bahrain, n.d.) to name a few.

For HE in Bahrain, United Kingdom, has always played an advisory and consultancy role for many education projects in Bahrain. Very recently HEA framework is adopted, University of Bahrain is the first in the region to award HEA fellowship (Institutional Approaches to Enhancing Learning and Teaching - 18 October 2016 at the University of Bahrain | Higher Education Academy, 2020) followed by Bahrain Polytechnic. There are some other institutions who are collaborating with HEA to acquire fellowship status for its academics, validating their academic practice. There are several other UK-based professional qualifications delivered in Bahrain, such as in collaboration with Charted Institute of Professional Development. HE in Bahrain is emerging and implementing many reforms, programs and international qualifications that are inspired by UK-HE. One such example is implementation of National Qualification Framework (General Directorate of National Qualifications Framework, 2018) that was developed with technical support from Scottish Qualifications Authority (SQA), and following practices from Scottish Credit and Qualifications Framework Partnership (SCQFP) and Regulated Qualifications Framework (RQF) – UK.

2.6 The Changing HE and This Study

In various parts of the world, higher education systems have transformed over the recent decades. With emergence of competitiveness, innovation and knowledge ecosystem, emphasis is brought on the developmental, financial and social role of HEIs. The academics, being the key job role of any HEI, are facing changes in the expectations from them; the performance, promotion and workload allocation criteria are changing along with growing reporting and accountability at individual and institutional level (McMillan, 2020). This dynamic setup of expectations has direct implications for academics' professional practices and institutional professional development function, for the obvious reason that academics with their specialist knowledge and skills are central to these knowledge intensive organizations

(Stewart and Rigg, 2011, p. 185). This research is aimed at establishing a holistic approach to PD where academics and institutions not only value the link between KE and PD but also appreciate academics to enhance their engagement in the KE that ultimately enables academics, HEIs and other stakeholders in working towards a shared vision of knowledge-driven progressive economy.

2.6.1 The Idea: KE and PD

The idea of investigating KE as a PD activity has come from various research works where indication of change in teaching practice is indicated along with impact on other academic functions in HE. One of such research work is conducted by UK innovation research center, representing academics' perspective from UK's older, younger, special and Russel group universities, it indicates that approximately 68.1 % of academics believe that participation in such activities has a positive impact on their course development, delivery and their academic functions (Abeu et al., 2009, p 54). This research is aimed at presenting a learning-centered, progressive approach to university industry collaboration and aimed at investigating what, why and how KE can provide professional development and impacts academic job role. Advocating a similar idea, there are a range of research reports presented as part of government, institution and individual research projects, that are focused on understanding and exploring academics' perspective about development and learning in Knowledge exchange activities such as (Hughes and Kitson, 2012) and (Rayna and Striukova , 2015). However, they are largely focused on understanding KE as a phenomenon and function rather than a professional development engagement for academics.

2.6.2 The Link: KE and PD

As mentioned earlier, the complexity around Higher education institutions' (HEIs) role in society and economy is growing, a lot of research has been dedicated to understanding the possibilities of bridging HEIs and Industry. However, efforts on linking the academics' professional development and preparing them for the changing roles are still an area for further exploration. This study is aimed at explicitly understanding professional development function in the changing settings and linking it to the advancements in the knowledge exchange phenomenon. This chapter has discussed changing HE environments in UK and Bahrain; where UK-HE show casing a legendry HE-system and Bahrain, presenting a UK-inspired emerging HE system. Considering the goals of this research project, this study has captured the perspective of academics and academic leadership, from eleven different subject fields and nine different countries of origin, working in UK or Bahrain, at the time of data collection. As mentioned earlier, it is not a comparative study aiming to compare Bahrain and UK in anyway, nor it aims to bring recommendations for improvement from UK to Bahrain. It collects data from these two systems to answer the research question and achieve set learning goals.

Chapter 3 Literature Review

3.1 Introduction:

The literature review unpacks the two major topics of the research, i.e., the professional development and knowledge exchange; followed by reviewing literature to establish the link between the two and understanding KE as a PD opportunity. It reviews professional development practices, how to evaluation of effectiveness of PD practices, and theoretical foundations of learning and professional development and how academics learn. The chapter unfolds the topic of KE, the evolution of the concept, what it means for HEIs and academics and finally it integrates PD, KE and learning. The chapter also provides a review on institutional governance and person-environment fit perspective on academics' participation in KE.

The chapter reviews the topic of professional development by discussing it from the perspective of talent development in the organizational settings and academics' development in HE. It reviews academic professional development approaches and their evaluation in HE. It presents a review of existing literature to establish an understanding of the link between knowledge, learning and development. It finally illuminates the idea of knowledge exchange as a potential PD activity by emphasizing on how academics learn. The literature review aimes to conclude that university industry knowledge exchange is a means of professional development. The chapter has unfolded the topics by applying systemic narrative literature review (Tanfield et al., 2003). It incorporates perspectives from theory and practice to advocate a deeper critical evaluation of the dynamics and settings of KE that are conducive for academics' professional development. Parallel to this, literature from relevant professional bodies, Government and supranational entities is also incorporated such as Higher Education Academy (HEA) UK, University Industry Collaboration, CIPD, Chartered Association of Business Schools Learning, Teaching and Student Experience (LTSE), AACSB and UNESCO, to name a few. Complementary to this, websites of a range of universities are consulted. The literature review is based on the analysis of scholarly outputs including PhD thesis, books, scholarly articles from peer reviewed journals, conference papers, reports from government and other regulatory bodies.

In order to fulfill the purpose of the study, i.e., emphasizing the need for a dynamic PD setup, going beyond formal PD activities; the literature review also aims to identify the gap in the existing literature about conceptualizing such dynamic PD activities for academics, considering the changing context of HEIs.

3.2 Understanding Professional Development

3.2.1 Defining PD

Professional development (PD) is an ongoing human resource activity that is considered key for the individual and organizational growth. Professional development is characterized by enhancing employees' skills, knowledge and competencies that are required to meet the short- and long-term strategic goals of the organization (Stewart and Rigg, 2011, p. 30). Guskey (2000) defines PD in educational settings in a very similar manner by identifying 'the processes and activities designed to enhance the professional knowledge, skills and attitudes of educators so that they might, in turn , improve the learning of students' (p. 16). With the rising competitiveness in higher education, the management of higher education institutions is also strategized, and the professional development of its employees is becoming equally important. However, PD strategies for academic employees are designed differently from PD activities for administrative workforce, for the obvious reason of the difference in their role in achieving HEIs purpose.

3.2.2 PD in the Organizational Settings

Professional Development also known as training and development or employee development function; is one of the human resource management functions, in the organizational settings. Although both, training and development are about enhancing employees' knowledge and skills, however, training is often considered a method to cope up with an immediate, short-term and a job-specific need. Also termed as employee development, includes interventions, programmes and activities that are aimed at enhancing employees' competencies for future growth and potential opportunities, within and outside the organization. Participation in developmental activities is more voluntary, self-paced (Bowell, 2000, p. 58). PD is also customized to individuals' needs, such as, career progression to a more responsible position, job switching and sometimes, for employees' personal satisfaction with the organization. Training, however, also considered a part of employee development function.

Over the years, employee development function, has been explored under various similar titles such as training and development, competency enhancement, professional development, professional learning, people development, continuous professional development, human capital development and, very recently, talent development. Although these terminologies describe employee development in a slightly variant manner, the core purpose remains unchanged, i.e., enabling employees to learn new knowledge, skills and competencies so that they can contribute more effectively towards organizational strategic agendas in near and far future.

Stewart and Rigg (2011), in their work for Chartered Institute of Professional Development, explain professional development (PD), as a competency enhancement that is directly linked to the profession that an employee is in and aspire to take in their career. They define, a PD activity, in its holistic terms, as "any event that is deliberately undertaken to support, provoke or assist learning" (Stewart and Rigg, 2011, p 219). They have summarized development interventions [Table: 2] into three categories that are, 'away from work, at work and through work' (p. 220). They have advocated for a more customized and dynamic approach to professional development rather than following static, discrete and overly structured ones. They emphasize on the value of 'through work' professional development in achieving short and long-term organizational goals rather than away from work PD activities. The 'away from

work' interventions include formal education, development centers and/or enrollment in university programmes, where a discrete amount of time is needed, and the learner do not get the chance to apply the learning. The development and learning opportunities that are provided 'at work', however, do not necessarily expect the learner to apply the learning are categorized as 'at-work' strategies such as observing experienced fellows while performing, e-learning etc. The interventions that develop employees while they are performing their job and through the activities that are a part of their job and provide development opportunities are described as 'professional development through work'.

Table 2: Talent Development interventions (Stewart and Rigg, 2011, p. 220)

	Intervention Method										
	Action learning	Coaching	Mentoring	International assignment	Shadowing	Secondment	Reflective practice	E-learning	Buddying	Development Center	College University courses
Away from work								★		★	★
At work					★			★	★		
Through work	★	★	★	★		★	★				

3.3 Understanding Academics' Professional Development in Higher Education

The HEIs' workforce is often divided into two distinctive categories of academic and non-academic/administrative workforce and the PD function is carried out for all employees. However, realizing the changing role of academics and its link to achieving the strategic goals for HEIs, attentions are needed to be diverted to PD function for academics (Tyagi et al., 2017, p. 49) which requires modifications accordingly. The academics are expected to participate in PD activities to improve their professional practices (De Rijdt et al., 2016). The professional development for academics is usually divided into three categories, PD for enhancing subject knowledge, for conducting research and for improving teaching/pedagogical practices (Roscoe, 2002). Some of the professional development interventions, used in HEIs, include formal education, assessment, job experience, and interpersonal relationships (Noe et al., 2007, p.295) and there are a few other PD activities are also valued by

academics such as mentoring, action learning, e-learning and participation in conferences (Jacob et al., 2019, p. 809). Since employee development interventions are also often discussed as part of Talent development literature (Stewart and Rigg, 2011), these categories have appeared in the paper titled, *The Choreography of Talent Development in Higher Education* (Khalid, 2019).

3.3.1 The formal education: The formal education as a development opportunity includes, financial or operational support to complete formal degrees (such as, PhD and doctoral studies), professional certifications (such as field specific certifications e.g, ACCA, Microsoft certifications, Project Management certifications etc.) and other sorts of qualifications and fellowships such as CIPD fellowship, HEA fellowship, Post-Doctoral fellowship. The financial and operational support is provided in the forms of funds, study leave, sabbaticals (Else, 2015), scholarships and other formal professional development courses (Fry et al., 2008). It enables academics enhancing their subject knowledge and/or job performance. Institutions are eager to provide such opportunities as it enhances their reputation (Khalid, 2019). The HEIs, in many parts of the world, also have an in-house development system such as based on an internal teaching and learning center, aiming to enhance the teaching practices of academics. Depending on the HEIs' needs, these centers offer development opportunities that covers pedagogy such as know-how sessions on flipped classroom, problem-based learning, critical pedagogy etc. Although these topics are prevalent for some time now, however, today's academics do not find them as relevant and current (Viskovic, 2005, p. 400). Sometimes they are considered irrelevant and less effective than informal and on-the-job learning.

3.3.2 Assessment and performance reviews are also considered a valuable development opportunity in the HE organizational settings (Franco-Santos et al., 2013). The academics' performance data is collected from various sources that is fed back into the academics' development portfolio. The data sources, sometimes include, performance appraisals, 360-degree feedback, performance review, satisfaction survey, peer review of teaching practice etc. Such evaluation and reflection on those experiences provide opportunities for improvement in professional practices. Sometimes these job experiences also include assignments that are not part of academics' regular role, these challenges force employees to reskill and upskill that in turns develop them for future roles (McCall,1998). Job-rotation and job-enlargement are two very common approaches to provide a wider range of experiences, the employees are asked to perform the tasks that are not necessarily in the job description (Noe et al., 2007, p.301). Academics are asked to take part in group/ social research projects that provide them practical, industry specific and problem-based experiences. Such experiences and the reviews based on them, enhance competencies to design courses, develop assessments and write book chapters that hence develop academics for their dynamic role in the academic world.

3.3.3 The interpersonal learning

Interpersonal learning (Al Ariss and Dessler, 2012, p. 197), as the name suggest, is the PD approach where mostly early career academics are placed to work with more experienced peers and learning happens as part of day to day interaction with more experienced academics. Shadowing and Buddying (O'Toole and Essex, 2012) are the two common formal approaches to allow inductees to learn from their

peers. Literature evidences some other form of collaborative learning and development methods that are used for academic's professional development (Khalid, 2019). This includes Coaching (Mabey & Thomson, 2001; Iordanou et al., 2015), Action learning (Mabey & Thomson, 2001; Pedler et al., p 49), Mentoring (Mabey & Thomson, 2001; Shagrir, 2017, p.10)).

3.3.4 Coaching

Coaching is equally useful development method inside and outside the academic world of higher education (Iordanou et al., 2015). In HE, quite often used for the inductees who need to learn the operational knowledge around academic practices such as how to implement Problem-Based Learning in course design, or how to apply internationalization strategy into curriculum development etc. of the organization with compromising on the employee's engagement (Stewart and Rigg, 2011, p.197). It is often a short term relation where coach sets the learning goals and process to achieve those goals (Megginson and Clutterbuck, 2004). Along with formal studies, coaching is considered one of effective employee development methods (Manpower Services Commission, 1981, p.15; Grant et al., 2010).

3.3.5 Action learning

Action learning (Revans, 2012) is one of the recent developments in employee development function, in general, and also in academics' development (Mabey & Thomson, 2001). Action learning, is a collaborative form of problem solving that enables participants to act, reflect and progress organizational learning while developing individuals at the same time (Pedler *et al.*, p.58). Action learning is not limited by the fixed outcomes, it also enhances participants' knowledge, skills and abilities towards performing academic roles.

3.3.6 Mentoring

Another collaborative professional development method, valued by HE academics is mentoring (Shagrir, 2017, p.10). Mentoring is a useful technique for novice as well as experienced academics as it focuses on individual's development rather than mastery on a task. The mentor and mentee relation is relatively long term where the mentee take the charge of his/her own learning goals and process (Megginson and Clutterbuck, 2004). Mentoring allows transferring organizational procedural knowledge, increased career and job satisfaction and higher retention (Stewart and Rigg, 2011, p.206; (Wanberg *et al*., 2003)).

3.3.7 E-Learning

The use of technologies, internet and gadgets is as popular in academics' development as in any other profession. Along with person-to-person methods on-going academic professional development also deploys technology, as E-learning (Hou *et al.,*2009; Rienties *et al.,* 2013). E-learning (Garrison, 2011) is used to conduct formal and informal learning interventions. The year 2020 has seen a spike in the use of technology in learning and development function, like in many other areas of organizational functions. Academics often use institutional learning platform or interact with distant experts (Hou *et al*., 2009) to share and learn new knowledge. A variety of e-Learning platforms include, webinars, Skype-tutorials, e-

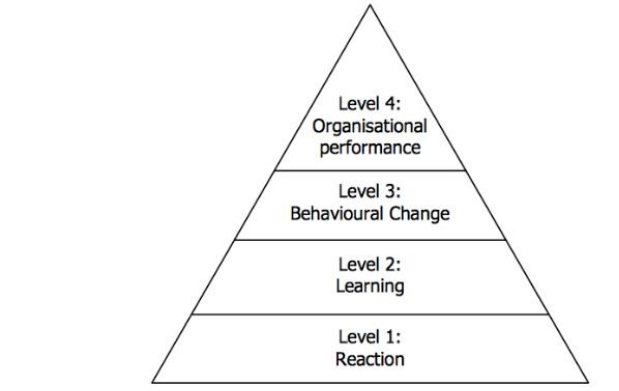
workshops, networking and blogging tools etc. E-learning is considered cost-effective and flexible; with inclusion of learning apps and virtual reality, e-learning has become more fun and efficient as the same time. However, e-learning is more of a platform for information sharing and engagement, that is done as part of another PD method such as for planned discussion sessions rather than a PD intervention, on its own.

3.4 Evaluating PD activities

An effective PD intervention would enhance learners' knowledge and skills and their performance on the job (Dokko *et al*., 2009). This signals the requirement of evaluating the value of PD activities, in terms of improvement in performance. The research on evaluation of PD programmes is not as rich as for designing and developing them, as for some scholars it is time consuming and offers less value (Guskey, 2000). Nevertheless, various models have been used in relation to evaluate the effectiveness PD initiatives.

3.4.1 Kirkpatrick's model

The PD activities are often evaluated using Kirkpatrick's model that was first introduced in 50's (Guskey, 2000) and is still applied to evaluate various training and development programmes. The model describes four levels of evaluation (Kirkpatrick and Kirkpatrick, 2008, p 21). The first level is the assessment of individuals' satisfaction with the developmental intervention; the second level is the assurance of learning at the participant's level, i.e, if the participant has learned the knowledge and/or skills; the third level is the application at the workplace. It included finding evidence of the use of learned competencies in performing work responsibilities. The fourth level of evaluation at the organizational level where evidence is collected to indicate enhancement in organizational performance or achievement of strategic goals.



Source: from Kirkpatrick, 1996

Figure 2: Levels of PD evaluation (Kirkpatrick model, 1996)

Although Kirkpatrick's model is still being applied, especially in business-driven organizational settings, it has some limitations when it comes to the education and academic field (Guskey, 2000). It does not always incorporate 'the why' around the effectiveness of a training programme as much as it evidences 'the what' (Alliger & Janak, 1989; Holton, 1996).

3.4.2 Anderson's approaches to PD evaluation

Another evaluation method used to measure the effectiveness of a development intervention is presented by Anderson (2007). She describes four main approaches to evaluate PD namely, 'the efficiency measure, the internal performance indicators and external benchmarks, Return on Investment, Return on Expectations' (p 51). This efficiency approach includes quantifiable indicators such as number of hours and costs, the second approach is about assessing individual's performance against the performance indicators that are further strategically aligned to organizational success indicators. The third approach is the Return on Investment that is about measuring 'the bottom line', whether a development activity has resulted into increased earnings for the company or not. The fourth assessment approach is Return on Expectations, which is a qualitative measure considering the satisfaction of stakeholders with the total experience of the developmental intervention. These four approaches are more applicable to the controlled, collective and planned developmental programmes, they are more focused on the big picture agendas rather than entirely focusing on the competency enhancement at an individual level. Similar principles of PD evaluation are adapted for PD in education systems such as by Guskey (2000, 2003).

3.4.3 Guskey's Levels for PD evaluation and application in this research

Guskey presented a five-level tool for evaluating the effectiveness of PD activities. He has also provided the key questions to be asked at each level and the possible sources to find the authentic data to validate the effectiveness of PD activity from the individual to the organizational level. The five levels are as follows:

- Level 1: Participants' Reactions
- Level 2: Participants' Learning
- Level 3: Organization Support and Change
- Level 4: Participants' Use of New Knowledge and Skills
- Level 5: Students' learning outcomes
  (Source: Five critical levels of professional development evaluation (Guskey,2003).

The first level of PD evaluation relates to the individuals' personal experience of the interventions. This can be as narrow as to the physical environment where the intervention took place. This is usually done in the form of a prompt questionnaire. This evaluation is aimed at collecting the most recent feedback to identify administrative and environmental improvement opportunities. The second level is focused on the outcome of the PD activity in the form of knowledge, skills and enhancement in the attitudes of the academics. The methods to collect data include academics' portfolios and reflective accounts. The third

level involves the compatibility of the PD activity with the organizational setup, firstly if it supports the execution of the PD activity and secondly if it allows to bring changes in the way things are done at the organization. The fourth level of PD intervention evaluation is the use of acquired knowledge and skill while performing professional responsibilities. For example, if and how academics are incorporating the new knowledge in areas of professional practice, such as around pedagogy, research, designing their course materials, assessments, projects in collaboration with industry and what value that PD intervention has brought. The data collection, at this level is also in the form of interviews, institutional data and portfolios. The fifth level of evaluation relates to the impact on the students' learning experiences that can be evidenced in students' feedback in questionnaires, institutional records and academics' portfolios. These five levels also represent the complexity of the topic (p.78).

In HE, Guskey's model for PD evaluation is often used to establish the theoretical/conceptual understanding for a PD intervention (Muijs and Reynolds, 2017 ; Opfer and Pedder, 2011) and also to evaluate the practical/ operational fitness of a PD intervention (Caffarella and Daffron , 2013). In order to analyze the fitness of KE activities as a PD opportunity, this research has established its idea on Guskey's model because of its conceptual fitness and theoretical alignment to the research question and secondly because of its methodological fitness. Guskey conceives PD as an ongoing activity that is interwoven into everyday professional life rather than a one-off event; which is aligned to this research where KE is investigated as a professional practice that provides an on-going learning and developmental opportunity. Guskey's attention to organizational compatibility (level-3) is also aligned to this research aim of investigating the conduciveness for enhancing participation in KE. Moreover, KE is regarded as an opportunity to apply the learned competencies as well as to acquire new (level-4). Last and but not the least, this research conceptualizes KE as directly linked to students' learning, which is described in level-5 of the model. He advocates that the PD activities improve teachers' knowledge and/or teaching practices that in turn enhances students' learning (p 75). This study has operationalized the model while designing the interview questions, the interview question types were chosen applying Guskey's data collection idea. According to this evaluation framework, interviewing the participants is a valid and reliable techniques to collect participants' perspective and evaluate the effectiveness of the PD function, where participants can share their immediate reaction, the learning and how that learning was translated in their professional practices. The interview guide includes reflective questions (Moon, 2004), behavioral questions and situational questions that allowed collecting evidences on all the five levels of the PD evaluation.

3.5 Understanding Knowledge

Knowledge, undoubtedly, is a resource in today's competitive knowledge economy (Dossou-Yovo and Tremblay, 2012); (Argote and Ingram, 2000). Although much has written about the typologies, processes and factors affecting knowledge management and knowledge exchange; the topic of defining 'knowledge' is still a debate and misunderstood in various settings (Tsoukas, 2005, p.106), such as the assumption that the education and age are the determinants of knowledge possession. It was in the latter half of the previous century, when defining knowledge was brought into the discussion.

Knowledge is commonly understood as an individual's ability to do things in a certain way. Polanyi's work on *personal knowledge, tacit knowledge* and *'knowing and being'* in late 60's, emphasized on knowledge as an action and skill in use rather than a body of text/ literature. Parallel to this organizations started to emphasize on knowledge as the most valuable resource, an 'engine of production' (1965, p.115) and a source of distinction (Quinn, 1992, p.241). The topic of understanding knowledge got more attention in the 1990's with the realization on knowledge economy, knowledge as asset and knowledge management. Polanyi's ideas were further developed and adapted in describing knowledge types, i.e, practical and theoretical knowledge. The practical/ procedural knowledge is based on the experiences in problem-solving and working on the projects and labelled as *'Know-how'*, Polany's *'*tacit knowledge', 'procedural knowledge'. The theoretical knowledge, on the other hand, is post-experience reflective *know-what*, 'declared knowledge' and Polany's 'explicit knowledge' which can be communicated in facts, figures and theory. In the higher education settings, there are two very contrasting, yet authentic divisions of knowledge presented as low-polarized and high-polarized. The low-polarized knowledge is value neutral knowledge that is generated by researchers, published in academic journals and brought to the practitioners. The other form is the 'highly polarized, value intensive and user driven knowledge' (Contandriopoulos *et al.*, 2010). However, this study describes knowledge as application of theoretical knowledge that is relevant to an occupational field of practice; knowledge and application that involves learning about the field of practice; knowing how (the skills) and the application of those skills; knowledge to solve problems; and related knowledge that includes transferable, personal and interpersonal skills (Weelahan, 2008).

3.6 The University Industry Knowledge Exchange (KE)

Knowledge exchange is about sharing, learning and creating new knowledge within and between the organizations (Nahapiet & Ghoshal, 1998; Collins &Smith, 2006). Similarly, Knowledge exchange in HE is the relation of sharing, learning and creating new knowledge between higher education institutions and other stakeholders, particularly industry. KE is defined as any activity around research, teaching, patents that results in the sharing of knowledge, expertise and skills (Benneworth, 2011; Delanty, 2002). The concept of knowledge exchange is based on the ideas of 'university Industry collaboration', university-community engagement, university's third mission and entrepreneurial universities (Etzkowitz & Zhou, 2017). It signifies the role of HEIs as sustainable contributor to the knowledge intensive, entrepreneurial society (Link et al., 2017). KE is also very much relevant to the teaching and research activities (Benneworth, 2011, p. 16) as both contribute to developing an environment of social linkage and benefit to the community. Universities circulate, impart and apply knowledge (Allen, 1988). "KE, lies at the heart of everything universities do", however, sometimes overlooked and not accounted for (Benneworth, 2011).

3.6.1 KE-The Concept Evolution

The notion of university collaboration with its external stakeholders has existed for long, even in the times of university for elite; when, via research centers, HE would collaborate with government, ministries and development centers. However, the idea was initially coined as 'knowledge transfer',

unidirectional, rather than knowledge exchange, i.e, in both directions (Leydesdorff et al., 2016). The shift in understanding it as a bilateral relation of exchange was witnessed in the last three decades of 20th century. For example, Allen's work on 'university-knowledge exchange activity' (1989), Mode-II of knowledge generation by Gibbons et al., (1994). Soon, the linkage between industry and HEIs was realized as the relation of 'exchange' between the entities; universities started to claim patents and earning revenues (Mowery et al., 2001), (Powell & Dayson, 2011). However, the real value of KE was acknowledged most prominently as 'the learning process' for the participants (Abreu et al., 2009; Schartinger et al., 2002; Gordon, 2016; Hughes, 2011; Perkmann and Walsh, 2007) where all parties learn from the interaction.

The concept of KE is pioneered on the ideas of 'civic engagement' from early 90s, where engaged universities were described by their more 'sympathetic' and 'productive' involvement in the community through their research, teaching, solving community problems (Jacob et al., 2015) and other services functions (Kellogg Commission, 1999, p. 193). Later on, described as, university-community engagement, the importance of collaborative learning continued to be emphasized towards the last decade of the previous century. The idea of KE is based on the understanding that the relationship of learning between university and community is 'two-way', (Gamson *et al.*, 1998); (Popkewitz, 2000). Apart from developing human capital for a society, universities are, commonly, understood to build partnership with community including businesses and other stakeholders on the bases of mutual respect and benefits. Some universities and academics dedicate separate time for university engagement whereas other academics integrate their teaching, research and university engagement (Jacob et al., 2015, p.73). The breadth of KE and its link to other academic functions can be explained from one of the pioneering university industry partnership definition such as given by Kellogg Commission, which was later translated into more recent descriptions such as (Knowledge Exchange Framework Consultation, 2019) explained in the previous chapter.

3.6.2 KE Activities

KE activities are "people based, problem solving and community-oriented activities" (Abreu et al., 2009, p. 7) that include a wide range of possible short- and long-term collaborations between HEIs and relevant industry. Such activities often include 'Networks (specifically social, for example, between academics and the business community); Continuing Professional Development (CPD); Consultancy; Collaborative Research; Contract Research; Licensing; Spin-Outs and Teaching (Knowledge Exchange Framework Consultation, 2019, p. 8), (RSM PACEC Ltd, 2017, p.49). Nevertheless, these are not the only methods of KE activities. Ankrah and Al-Tabbaa (2015) segregate university-industry KE formats into six main categories [Table 3], the first two categories of KE are people-to-people knowledge sharing, at personal/individual level, done in formal and informal manners. Third-party KE activities are carried out with an intermediary entity between industry and university such as associations funded by government or professional bodies. The last three categories are relatively large scale and planned for relatively longer term. Top leadership takes these projects as strategic milestones and device polices to then involve academics and researchers to contribute towards these projects. There are varied formal and informal ways of academics' engagement and KE (Abreu et al., 2009; Zhang et al., 2017; Zong, 2018).

Although, it is undoubtedly important to establish a taxonomy for KE, for this research however, KE-activities are incorporated without differentiation of types, with pioneering idea that KE activities are about disseminating and discovering knowledge, providing staff and students satisfaction and developing skills (Benneworth, 2011; Delanty, 2002). The reason to do so is to allow maximum opportunity to gauge how and what academics learned from participation in KE activities and hence obtain data relevant to the research questions.

Table 3: KE Formats: University Industry Collaboration (Ankrah and Al-Tabbaa, 2015, p. 391).

Main Category	Forms of universities and industries relationship
Personal Informal Relationships	– Academic spin-offs – Individual consultancy (paid for or free) – Information exchange forums – Collegial interchange, conference, and publications – Joint or individual lectures – Personal contact with university academic staff or industrial staff – Co-locational arrangement
Personal Formal Relationships	– Student internships and sandwich courses – Students' involvement in industrial projects – Scholarships, Studentships, Fellowships and postgraduate linkages – Joint supervision of PhDs and Masters theses – Exchange programmes (e.g. secondment) – Sabbaticals periods for professors – Hiring of graduate students – Employment of relevant scientists by industry – Use of university or industrial facility (e.g., lab, database, etc.)
Third Party	– Institutional consultancy (university companies including Faculty Consulting) – Liaison offices (in universities or industry) – General Assistance Units (including technology transfer organizations) – Government Agencies (including regional technology transfer networks) – Industrial associations (functioning as brokers) – Technological Brokerage Companies
Formal Targeted Agreements	– Contract research (including technical services contract) – Patenting and Licensing Agreements (licensing of intellectual property rights) – Cooperative research projects – Equity holding in companies by universities or faculty members – Exchange of research materials or Joint curriculum development: – Joint research programmes (including Joint venture research project with a university as a research partner or Joint venture research project with a university as a subcontractor) – Training Programmes for employees

Formal Non-Targeted Agreements	– Broad agreements for U-I collaborations – Endowed Chairs and Advisory Boards – Funding of university posts – Industrially sponsored R&D in university departments – Research grant, gifts, endowment, trusts donations (financial or equipment), general or directed to specific departments or academics
Focused Structures	– Association contracts – Innovation/incubation centers – Research, science and technology parks – University–Industry Consortia – University–Industry research cooperative research canters – Subsidiary ownerships – Mergers

3.6.3 KE and Higher Education Institutions:

The extent and the form of KE activities that academics would engage in, is highly dependent on the institutional strategic direction and policies and procedures, which is influenced by HEI's approach to decision making and governance. Governance in HEIs includes processes for institutional decision making, policy making and goal setting (Tarkman, 2008). KE as one of the growing strategic affairs for HEIs and other stakeholders, cannot be implemented without a congruent governing system that has full understanding of the value and need of KE in today's times. Since the inception of triple helix model (Leydesdorff and Etzkowitz, 1998) and further development in quadruplex model (Lundvall et al., 2002), the topic of KE has got more prominence in HE institutional policy-making and signifies the need for establishing a decision making system that perceives KE in the same manner.

Tarkman (2008) describes five models of university top-level governance. The first model of university governess is driven by the understanding that academics, as the board of governance are in the best position to understand the academic affairs and hence propagates that HEIs must be governed by academics. The second model suggests the corporate view of institutional governance and presents a business-oriented approach to decision making; suggesting that HEIs are best managed by professional managers where decision making is driven by efficiency and accountability. The third model of HEI governance is rather 'vague', handing over the decision-making responsibilities to a group of extremely trustworthy representatives of community. This board of trustees, performing its 'trust duties' (Tarkman, 2008) concerns mainly about the ways of governance rather than only concerning a participative decision making by a representation of all stakeholders which Trakman describes in the fifth model of institutional governance. The fifth model that Tarkman calls 'stakeholder governance' stands on the pillars of prominent presence of all stakeholders, concerning the good for academics, students, and other groups in community that receives the implications of those decisions along with financial and managerial efficiencies. Tarkman's (2008) sixth stream of governance models is called 'Amalgam models', as the name suggests it has elements from each of the previous streams,

incorporating principals for governance allowing adaptations in governance mechanisms to suit the various contexts.

Competitions, financial constraints and exponentially expanding information brings HEIs governance close to a model of governance for an organization operating in a competitive and complex environment. Nevertheless, HEIs' core responsibilities of people development and knowledge enhancement cannot be compromised in the pursue of financial gains. The entrepreneurial institutions are to aim for financial sustainability, economic deliverables but not by undermining the academic and scholarship sides (Carnegie and Tuck, 2010) of HEI's core responsibilities. It is rather capitalizing on scholarship, teaching and learning and intellectual capital of HEIs, that can facilitate achieving entrepreneurial and sustainability goals (Khalid, 2017). Carnegie and Tuck (2010) propose one such model of HEI's governance called 'The ABC of University Governance' [Figure: 3], the model marries approaches from enterprise governance and HE institutional governance systems. The authors have proposed this model as 'fit for purpose' (p. 439) governance mechanism acknowledging the value-creation, quality assurance and knowledge enhancement responsibilities of HEIs.

The successful execution of KE and innovation ecosystem are increasingly appearing in the recent research where emphasis is brought to innovation in organizational processes to achieve benefits for HEIs and stakeholders (Arnkil et al., 2010, p. 14). With the growing role of KE in the demand-led innovation system (Colapinto and Porlezza, 2011), HEIs leadership need to establish robust policy framework for KE in alignment with legendary functions of research and teaching. Colapinto and Porlezza (2011, p.346), provide two main guidelines in this regards, *'capitalization'* where HEIs continue to create knowledge to advance the discipline and transfer it to the relevant users or *'interdependence'* where HEIs work closely with society, government and industry to create knowledge that has value for everyone. The implementation of KE, from policy to practice, requires an institutional commitment and brings managerial implications for governance, leadership and strategic planning. The research has further explored the impact of institutional commitment in achieving KE goals.

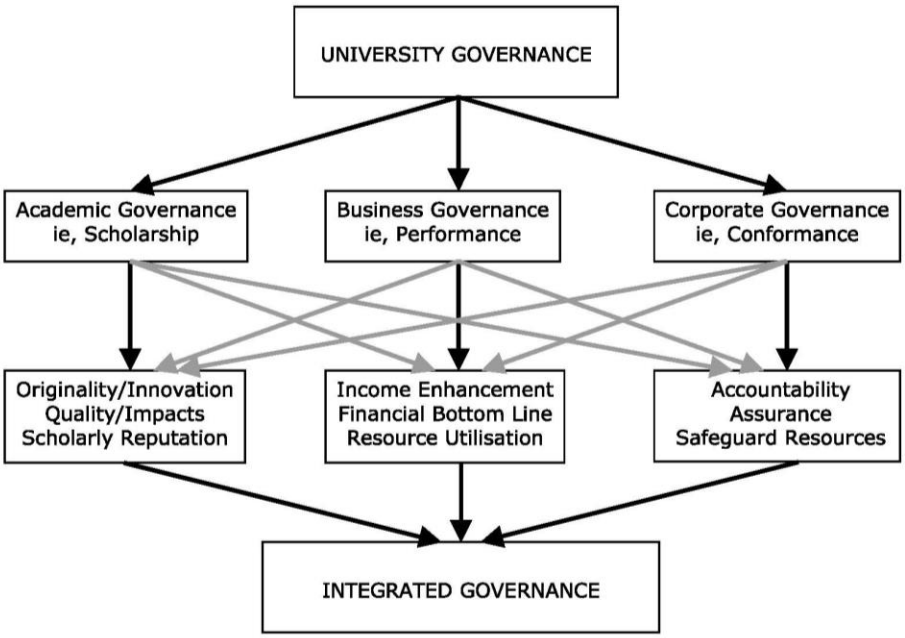


Figure 3: The ABC of University Governance (Carnegie and Tuck, 2010, p. 438)

3.7 Knowledge Exchange: What is in it for Academics

Along with financial gains, the concept of KE must be analyzed in the non-financial perspective (state of relations report, 2019) as well. KE is carried out through human relationships (Benneworth, 2011), that makes it important to also understand how it impacts the participants' learning. The processes of KE involves a range of formal and informal interactions that enhances learning process for the participants (Abreu et al., 2009). D'este and Perkmann (2011, p.333) advocates that the academics' interaction with industry is complex and hybrid. They argue that, although HEIs are keen on enhancing their financial gains from such collaborations, but these collaborations can be more beneficial if they facilitate both industry application and academic researchers. The academics get ideas for future research in their area of interest and industry get the knowledge and expert advice in solving their problems. In KE, industry provides current and contextual knowledge, that can provide academics with the insight into future opportunities for further research (Fergosonl, 2013). Various researches on the value of KE for academics, indicate that academics, generally believe in the value of their interaction with the industry however, do not want to confine within the boundaries of HEIs' financial benefits (D'Este & Perkmann, 2011 ; Abreu et al., 2009, p. 11). Perkmann et al., (2013, p. 423) describes KE as a means of enhancing academic engagement and emphasizes opportunities for further research in this area. Academics believe that engagement with industry has enhanced their insight into their own research and has also helped them in networking and learning from practitioners, there is also an agreement on the impact of participation in knowledge

exchange enhancing their teaching practices and programme and course development approaches (Abreu et al., 2009 ; Lee, 1996).

3.8 Academics Participation in KE: The Person-Environment Fit

Theory of person-environment fit is often used in Human Resource Management (HRM) studies to understand the complementary and supplementary (Ungemah, 2015) link between organization and employees to achieve various outcomes (Kristof-Brown and Guay, 2011). The theory suggests that an employee's performance can be negatively affected if he/she and its environment are not in congruence. A mismatch between person and his/her environment can negatively affect the individual's motivation, attitude and the outcome of that interaction (Wolraich, Dworkin, Drotar and Perrin, 2007); conversely, to achieve the expected individual's performance goals and hence organization's goals, a person-environment fit is important and unavoidable. For example, Wang and Wang (2018) studied the positive impact of alignment of personal and environmental features on increasing creativity in multi-cultural context. In HRM studies *, "Fit is defined as occurring whenever at least one entity (person or organization) provides what the other requires or when the employee and organization share certain fundamental characteristics in common*" (Ungemah, 2015, p.122).

Based on the theory of person-environment fit, it can be argued that academics' engagement in KE activities can be enhanced if academics perceive (Wilkinson and Johnstone, 2016) its environment as conducive for KE and compatible to their own understanding of participation in KE activities. The situation of fit would be prevailing when they perceive striving for a shared vision as employees and as organization called a supplementary fit and when HEIs or academics goals are achieved with this relation called complimentary fit.

3.9 Knowledge Exchange, Professional Development and Learning:

Knowledge is the outcome of social learning within an organization (Stacy, 2001). Knowledge in terms of finding new ways of doing things is seen as a 'product of complex human systems' that is exhibited through skilled performances (Tsoukas, 2005, p. 123). These complex human systems deploy both tacit and explicit knowledge in creating further knowledge (Tsoukas,2005, p.123) and developing people through the knowledge exchange in social interactions (Tsoukas,2001). It can be argued that knowledge creation and exchange is fabricated in the ideas of learning and people development processes (Afgan and Carvalho, 2010, p.28). Knowledge as know-how, know-what and know-why, is the active form as learning, it is dynamic and active process of learning and it continues to grow and refine with 'exchange and combination' (Moran and Ghoshal, 1996). The knowledge is acquired in the process of learning individually or collaboratively. Therefore, the discussion on creating, building and sharing knowledge is the discussion of learning and development (Bereiter 2002), as presented in Table 3. The learning-at-work and through work view of professional development aligns it with creating and sharing knowledge (Bratton and Gold, 2017, p.225).

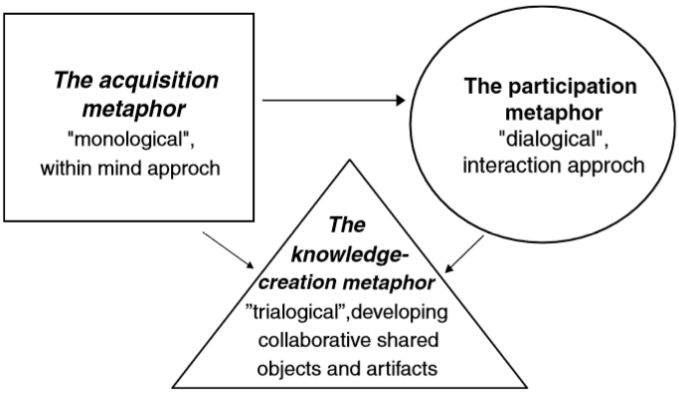


Figure 4: The Three Metaphors of Learning (Paavola and Hakkarainen, 2005, p 539)

Paavola and Hakkarainen (2005, p.537) presented the link between knowledge and learning as three metaphors. The three metaphors are connected and interdependent for successful learning and to operate in the knowledge economy. The *acquisition metaphor* represents the learning when body of conceptual knowledge is obtained/ assimilated by individuals. It is about knowledge construction at an individual level. The *participative metaphor*, however, addresses learning in collaborative settings of interaction with people and environment; where interaction with other participants and activities shape the learning and knowledge advancement. Participative metaphor, concentrates on activities, acquiring skills and knowing rather than knowledge as an artifact/output. It also argues that knowing cannot be separated from its context and environment and learning is the fabric of that connection. Learning, in the metaphor, is the 'social process of knowledge construction' (Paavola and Hakkarainen, 2005, p.538). Paavola and Hakkarainen, represent the third metaphor of learning, as the *knowledge creating* metaphor that highlights the importance of learning and conceptualizing at an individual level and as well as at the group level; it also illuminates the creating of the output as the knowledge artifacts. It is also important to mention that these leanings are not mutually exclusive.

Table 4: Conceptual alignment between Metaphors for learning and KE outputs

Metaphors for learning (Paavola and Hakkarainen, 2005)	**KE outputs** Zhang (2018)
Knowledge-creation Knowledge-acquisition Knowledge-exchange	Collaborative research
	Contract research
	Consultancy research
	F &E related services
	Courses for business

	IP activity
	Academic's professional development

These metaphors for learning are very close to the discussion of knowledge exchange in the university-industry collaboration, where individuals/participants practice their existing knowledge, interact with other people, environments and problems to develop solutions, patents and spinouts. The three metaphors of learning are very close to various activities that are done under the umbrella of UIKE. The main objectives of any development opportunity is to enhance individuals' performance and help them learn and grow (Bratton and Gold, 2017, p.221); engagement in knowledge creation , acquisition and exchange, can be argued providing such developmental and learning opportunities. Professional development, knowledge exchange and learning are linked and supplementary to each other. However, for the better understanding of the relation, it is first important to take a deeper look at PD, learning and how academics learn.

3.9.1 How academics learn:

To understand learning and development in KE, it is first needed to highlight the underpinning learning principles that are relevant to such learning interactions. Learning is described in its traditional divide of associative learning/behaviorism and cognitive learning. Stewart and Riggs (2011) group the theories of learning into four clusters:

1. "Behaviourist – learning as behaviour change or conditioning
2. Cognitivist – learning as understanding
3. Constructivist – learning as construction or creation of knowledge
4. Social – learning as social practice" (p.143).

The behaviorist theories of learning signify that the change in behavior and actions is the indication of learning, it also suggests that people can learn to behave in a certain way, without emotionally attaching themselves to it and even without thinking about the logic behind those procedures. It requires practice and guidance to learn an act. The cognitivist theories, on the other hand, relate learning with inner deep thoughts and emotions and argue that people learn when they are able to make cognitive links of the new information with their prior knowledge. If people are able to make sense of the newly acquired information, it will retain and becomes a part of long-term memory. These two clusters of theories address learning at an individual's personal level and explains learning as a passive receiving and processing of information. The constructivism view of learning, however, describes learning as a process of creating meanings, finding learner's own perspective and solutions. This view of learning advocates that individual may learn different concepts and skills and at different levels of competency though taking part in a same learning activity. The last cluster, social learning, advocates that people learn more when they interact

with each other and share their thoughts and ideas. This is a more practical and interactive view of how people learn. It emphasizes on the participation and active involvement in the learning process.

It can be argued that although these four clusters of learning theories identify different settings, but their application is not always mutually exclusive. For example, action learning (Revans, 2012) can happen in problem-based learning settings that rely on incremental disclosure of information and learned with the use of flowcharts and other visual artifacts. Moreover, cross-organizational project work, reflective conversations and joining communities of practice are a few social-constructionist learning mechanisms that can be regarded as pioneering principles for considering KE as a developmental opportunity.

3.9.2 Learning by experience- Kolb's theory of Experiential Learning:

The idea of KE as a PD opportunity can be understood through the pioneering theory of experiential learning as presented by David Kolb (1984) [Fig.5]. The theory illuminates the importance of learning as a process of interaction between an individual and his/her environment. It is established on the idea that an individual learns by experiencing a participation in a situation and context that allows the learner to later reflect and make inferences about what went wrong and what went well and why. This allows the learner to do abstract conceptualization, developing new connections and establishing new ideas, solutions and perspectives. These perspectives are then used as a frame of reference while making decision when the learner is actively engaged in similar situations. The theory of experiential learning is widely used in education as well as in management development and designing training and development programmes. When it comes to proposing a learning and professional development opportunity, it is undoubtedly important to understand the relevance and effectiveness of the opportunity in terms of the extent of reflection, experimentation, and abstraction it provides.

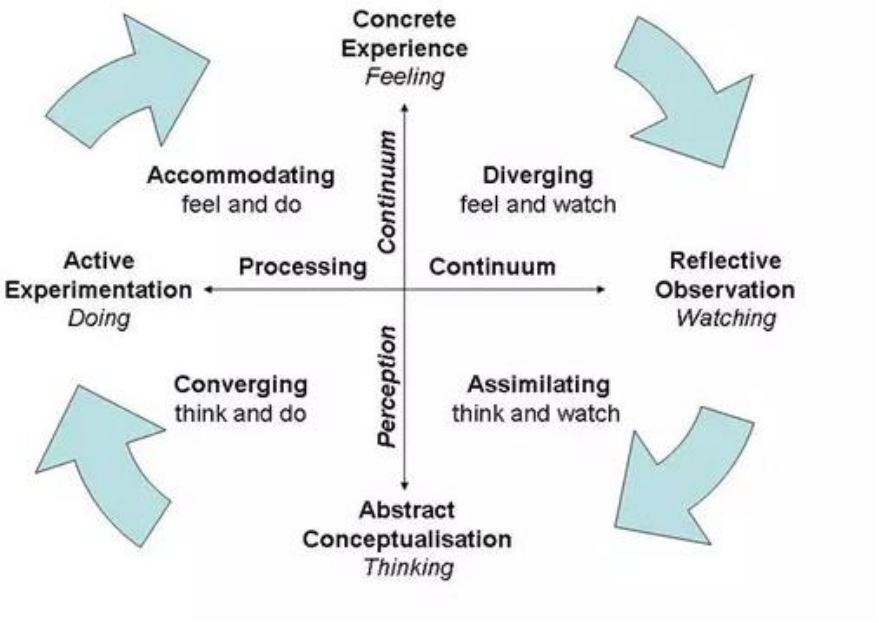


Figure 5: Kolb Learning Cycle

3.9.3 Learning by sharing knowledge- Theory of social construction of Knowledge:

People learn when they interact with others, discuss and challenge ideas and share and acquire knowledge. The social construction of theory represents the learning as an outcome of social interaction, which not only enhance participants' subject knowledge but also their learning to learn and other soft skills. In KE activities, academics, students and employer collaborate and learn in a variety of formal and informal methods. Social construction of knowledge requires participants engagement and collaboration on project.

In 1940s, Prof. Reg Revan, used his action learning approach in bringing universities and industries collaboration on various issues. Problem solving, sharing knowledge, creating new knowledge and collaboration were regarded as the pillars of such learning activities. He believed that action learning allows for 'development the self along with developing by self'. Learning is doing and social exchange of knowledge (Revan,2012). The action learning is one of the famous approaches in the education field and often used as an academic development approach (Mehorter, 2017). Learning in KE activities can be described by applying action and experiential learning principles. Where there is an active engagement of the members and action and reflection cycles through the processes at individual level. Based on Kolb's learning cycle, experiential learning (Kolb, 2014) explains learning as the outcome of experiences and engagement.

3.9.4 Learning by Reflection

As discussed above, the effectiveness of any developmental activity can be evidenced with various sources, such as performance reviews, students' feedback etc. The reflection, at an individual level,

however, provides a more comprehensive, thorough and well-thought out perspective of an individual's learning. That reflection account can be, in the form of a written (e.g., self-reflective essay) or a verbal account (a focused interview that collect evidence of application of learning).

Reflection is defined by various specialist, highlighting different perspectives on reflection. Such as, reflective learning, reflective practice, professional reflection. The reflection is a conscious and planned account of individual's learning that is evidenced through the reflector's account. Schön (1991) describes, knowledge as an outcome of practitioners' reflection evidencing professional development. It can be argued that reflective account can be a mean to validate knowledge creation and professional development , at the sametime. Reflection allows academics to account for their learning at workplace, while performing roles and responsibilities (Boud, 1998; Moon, 2004). Reflection, to account for learning at workplace, can be defined using Fook (2006) definition: "the ability to understand the social dimensions and political functions of experience and meaning making and the ability to apply this understanding in working in social contexts". Reflections are considered highly valuable source of learning in the academic staff development (Barnes & Caprino, 2016).

3.9.5 Understanding learner in the learning process:

Another theoretical perspective in understanding how adults learn is linked to the learning styles and the learning process. In the education world, it is largely associated with the concepts of Androgogy, that addresses the learning processes of adult learning as opposed to pedagogy which related to designing learning activities for children. The term was emphasized by Malcolm Knowles which later elaborated by Malouf(2003) by advocating that adults learn when they have experience of real world, they have pre-existing concrete learning that facilitates self-directed learning and problem analysis in various context. The concept of andragogy informs the design of professional development activities, paying more attention to adult learners in the learning process(Knowles et al, 1998) [Table 5].

Table 5: Understanding Adult Learner (Knowles et al., 1998)

Aspect	Andragogy
Need to know	Learner need to know why something is important prior to learning it.
Learner's self concept	Learners are responsible for their own decisions
Role of the learner's experience	the learner's experience has great importance.

Readiness to learn	Learners become ready to learn when they see content that is relevant to their lives.
Orientation to learning	Learners expect life-centered content.
Motivation	Learners are motivated by primarily internal factors.

4.0 The Changing Trends in Understanding Academics' PD Function and Relevance of This Research

The topic of defining the scope of PD function had been in debates since 19th century. Towards the closing of 20th century, with growing technological changes and industrial revolution the need for a better understanding of the academics' perspective on the value of PD gained momentum. Scribner (1999, p.257) advocated to go beyond the limits of formal PD and used the term professional learning and highlighted the significance of workplace context for 'how and what teachers learn as a professional'. Scribner argued for paying attention to the multiple contexts in which teachers work and how these contexts provide a range of learning activities and the impact of such learning on the academics' practices. Guskey (2000, 2003) argues that PD activities for academics are more effective when they continue, as a part of regular routine and are incorporated as a small change in the usual practice. He presents the following principles of effective professional development (p. 36, 37,38):

a) "A clear focus on learning and learners"
b) "An emphasis on individual and organizational change"
c) "Small changes guided by a grand vision"
d) "Ongoing professional development that is procedurally embedded" (Guskey, 2003)

The PD function is also affected by the changing landscape of industry and business ecosystem that require HEIs to perform at a more integrated and holistic model of knowledge exchange. This in turn require competency enhancement for academics, just like any other employee in a knowledge-dependent industry (Dewey & Duff, 2009, p.493); such enhancement cannot be left on coincident and by-chance learning. A careful strategic view of how academics can bring latest industry knowledge to the courses and to the classrooms require careful considerations of their PD as well. Jaramillo-Baquerizo, Valcke and Vanderlinde (2019) identified that PD is becoming more teacher-centered [customized to individual needs] and there is a need to redesign PD in a way that facilitate the possibility of transferring that knowledge in the professional practices. They also advocated the need to incorporate academics/ university teachers' perspective to analyze the effectiveness of PD activities in terms of transferring that

knowledge (p.9). The academic development community internationally has been advocating a more holistic approach to the PD function (Sutherland, 2018, p.266; Sutherland and Hall, 2018) rather than reporting isolated events. Trends are also seen in demands towards a more holistic PD models that cater for all areas of professional activities (research, teaching, administration and leadership) rather than only focused on the immediate job needs (p. 108).

The academic job roles are becoming more sophisticated with congruent integration of people, technology and innovative artifacts (Latour, 1999). Academics are expected to keep up with the advancements in relevant subject, industry and teaching fields. They need to continuously enhance their knowledge and skills to keep the currency of their profession (Guskey, 2000, p.3); (Dewey & Duff, 2009, p.493) ; (Ernst and Young, 2012)). Anna Reid and Peter Petocz (2003) highlighted the need to look out for new ways to carry out PD subjecting the changing role of academics in the higher education. The academics are expected to take the role of a 'teacher, researcher, administrator, manager, leader, entrepreneur, academic/community/corporate citizen, industry liaison, recruiter, fundraiser, and many more'(Sutherland, 2018, p 267); a versatile, multidimensional PD is needed to continuously equip academics for the changing job roles. Parallel to this, more understanding needs to be developed on the range of indicators that are used to capture the effectiveness of PD (Guskey, 2003, p 749) especially incorporating the students' learning experiences and outcomes.

Jacob et al., (2019) have addressed PD for university academics as a strategic affair. They have found that academics prefer a more customized and outcome-driven approach to PD rather than a standard set of activities offered to bigger groups of academics. They also found that the subject-specific PD activities were valued by academics and claimed that academics are more motivated to take part in PD activities if they are associated with a recognition/reward such as fellowship, grant, certificate or degree or any other recognition or appreciation. Integrating research and PD and opportunities to participate in conferences were also a part of findings by Jacob and colleagues. However, this research only considered the formal PD activities organized by the professional development centers in flagship HEIs. It contributes to our understanding of the need for further research in PD activities that are not limited to institutional offering. It opens door for further research about the PD activities initiated by academics themselves, formally or informally and are a part of their professional routine (Guskey, 2000, p.38) rather than a one-of event. Guskey (2000) suggests that effective PD is 'intentional, ongoing and systemic' (p. 16) where efforts for improvement are guided by clear goals that can be at any level i.e., individual, institutional and/or national level. He also advocates for a continual nature of PD to cope up with the dynamic and growing knowledge of the fields. Jaramillo-Baquerizo et al. (2019) has carried out a review of existing literature to highlight the defining principles addressing PD for university teachers, that are as follows:

- The PD should consider academics as learners (Lobato, 2012)
- Academics are central to the PD, the methods should be designed where academics' learning is kept at the focal point in making all the design and execution decisions, such as problem-based learning (Cho and Rathbun, 2013),

- an effective PD activity enables academics to demonstrate 'attitudinal, intellectual and behavioral change'. (Evans, 2014)
- The PD activity should allow for application of knowledge, exposure to new information, exhibition of competencies and relevance to authentic and practical problems (Botma et al., 2015).

Professional development of academics in HEIs involves multiple actors, it can be carried out in various settings and exhibits different levels of complexity and dynamics; Putnam and Borko (2000) recommends a '*situative*' approach to research PD in such settings, as it allows for incorporating 'multiple perspectives and multiple units of analysis' (Borko, 2004, p.4). Broko (2008, p.4) presents a systemic view on PD which incorporates the actors, who are directly involved in the PD activity provided to the teachers and the context in which PD takes place. She argues that outcome of a PD activity is influenced by the context, it is operating in (p.4). Moreover, PD is not always limited to the presence of facilitators/ trainers (Stewart and Rigg, 2011, p.219) as the situated context in which learner is operating, itself facilitate learning (Van der Sluis, Burden and Huet , 2017; Jaramillo-Baquerizo, 2019). This 'immersiveness' and 'situativeness' of PD bring it close to the phenomenon of learning in KE, which this research is aspiring to highlight by linking the existing literature on PD and KE.

The literature review provided in this chapter has not only facilitated the establishment of data collection instruments but has also provided the theoretical ground to link findings of this research to the research goals. This research is inline with the recent developments on the topic of PD for academics, aiming to propose KE as a versatile PD opportunity. KE can be considered a professional development opportunity if it is "focused on content knowledge; provides opportunities for active learning and is coherent to other learning activities" (Garet et al., 2000, p.916). In order to propose, KE as a PD opportunity, this research has investigated if KE sits well on the above-mentioned principles and if it can be regarded as a developmental opportunity for the academics to perform various job roles.

Chapter 4: Research Design

4.1 Introduction

This chapter explains the research design describing the areas of research activity harmonized to answer the research questions (Maxwell, 2012, p.5) and methodology adapted for the study. The chapter elaborates on the decisions around the research approach, data collection and data analysis and finally how it contributes to the theory development. This research adapts methodological ideas from both education and management studies.

The chapter is organized as follows, firstly it explains the philosophical underpinning of the research followed by discussion on the research design. Next is the discussion on developing research guide, explanation about the consideration on validity and reliability. The final section explains the analysis techniques followed by the conclusion.

4.2 Research Question: the overarching research question is as follows:

> *How does university industry knowledge exchange attract/encourage greater participation among academics and facilitate their professional development?*

As explained in the first chapter, this research is aimed to systemically investigate and critically evaluate the interplay between PD for academics and KE. This study has focused on investigating knowledge exchange (KE) as part of academic practice, analyzing learning and professional development, for KE and through KE and investigating the conduciveness of academics' work environment to encourage their participation in KE.

4.3 Research philosophy: epistemology and ontology

The 'ontology' is the branch of research philosophy that has helped me, like any researcher, understand my take on the 'nature of reality'; epistemology on the other hand has helped me understand my position on the 'nature of knowledge'. I follow 'constructionist-interpretivist' paradigm over positivism, post positivism and critical-ideological paradigms believing that reality is constructed in the minds and can be captured with 'deep reflection', such reflections can be triggered with interaction/dialogue between participant and the researcher (Ponterotto, 2005, p. 129).

4.3.1 Ontological belief

As a researcher, I will explain my philosophical position by starting with ontological and epistemological stances, as they have guided my research structure and design. My viewpoint on 'the nature of existence' (ontology) is more of 'constructionist-interpretivist, as opposed to positivist or postpositivist; as I believe that subjective to individuals' experiences, a social phenomenon is driven and dependent on the social actors (people), they are evolved, understood and developed by continuous interaction with the people, and people are a part and parcel of a social phenomenon and hence does not disregard multiple realities, multiple experiences and multiple interpretations (Ponterotto, 2005, p.130 ;

Schwandt, 1994). In my study, I am investigating the phenomenon of learning and development in the contextual settings of university-industry collaboration for KE. My ontological belief is that people, learning and development and university industry KE are highly interlinked. However, I also recognize the fact that people in the same context and settings gain different ideas and knowledge. Although, the very concept of university-industry collaboration and learning and development are rooted in social constructionism, but there are possibilities when these realities can be looked at objectively, that is explained in the research paradigm section.

4.3.2 Constructionist epistemology in this research:

This study stands on the constructionist epistemology, describing 'the nature of knowledge' as being dependent on the constructors of that knowledge. Such epistemological position is mostly considered more relevant to the social science than natural sciences. The natural sciences believe a more objectivist view of the world, for example one plus one is always two. The objectivist viewpoint believes that nature phenomenon such as, three laws of motion, were always there and the researchers find that knowledge based on facts and quantifiable observations. The research work done on objectivist epistemology, even on a social phenomenon, often follow quantitative research methods and/or mixed methods. Coming back to the constructionist epistemology, that has informed this research, is pillared on Berger and Lukman (1966) approach to understanding reality and the idea of social construction as prescribed by Gergen (1999).

Before I go into describing the research paradigm, I would first like to elaborate on the conventional approach in designing this research.

4.3.3 The approach

Objectivist/positivist approach or Subjectivist/constructivist approach are the two widely known contrasting epistemological positions. The objectivist approach sets clear boundaries between the researcher and the reality ; it is a viewpoint that advocates principles and laws as natural phenomenon and they are always held true no matter what, for example, natural sciences phenomena (Cohen et al., 1994, p. 10). It looks at phenomenon as discrete entities that are stand-alone and are indifferent from the context. Objectivist/positivist approach requires a great deal of isolating the variables from its environmental factors and sometimes controlling for such variables can cause a compromise on the value of research. The subjectivist/non-positivist approaches are considered more appropriate for social sciences and have been used in studies on higher education. The subjectivist/ non-positivist approach suggests that nature of reality and knowledge is highly dependent and shaped by the actors and the context in which that knowledge and reality is constructed. In simple words, reality and truth is subjective and constructed by the people living it. It does not necessarily mean that if those contexts and people will not be there the knowledge will not exist, but it will take a different form and represent a different stage/ level of social phenomenon (Ponterotto, 2005, p.130).

This study is aimed at understanding reality by incorporating a diversity of experiences and perspectives from individuals, however, at the same time developing a body of knowledge which is more objective,

representing the social phenomenon independently on its own. This is further explained in the research paradigm section.

4.3.4 Research paradigm: *critical realism*

As this study is based on 'constructionist-interpretivist' paradigm it is considered closed to subjectivism on the Subjectivist/ Objectivist continuum (Everly et al., 2008), believing that knowledge is contextually and socially constructed alongside acknowledging the process of learning builds on the knowledge that already exist. An individual can explain the exiting knowledge from his/her own point of view (Hyslop,2008) considering knowledge as an implied product of interaction. After establishing the link between the environment, people and a social phenomenon. I would like to highlight approach to this particular study i.e, *critical realism; it* sits on the middle of the Subjectivism/Objectivism continuum. Roy Bhasker is considered the 'guru' of this philosophical approach, that regards independent existence of reality as well as dependence on individuals' perspectives on defining that reality (O'Mahoney, 2014).

Since, the aim of my study is to bring attention to the value of knowledge-exchange interactions and provide a stand-alone body of knowledge i.e, theoretical contribution / framework that can inform further research and guide practitioners in designing developmental programs for academics. Therefore, it required a slight shift from the subjective approach, in the form of *critical realism*. Critical realism advocates that the knowledge created as the output of this study can be looked at independently, of this whole research process. This approach has enabled me to understand the structures and mechanisms, objectively, that are linked to construction of knowledge, development and learning in the prescribed settings (Fletcher, 2017).

Continuing with the discussion of my approach on this research, it is important to indicate that although this research considerers subjectivity of experiences in UIC but it does not mean that the actors have the 'full control' over it and there are no elements of similarities around learning and development among individuals, in this case academics from higher education. Darlaston-Jones (2007, p. 20) describes this notion by explaining that the 'reality' is true for individuals, but they cannot alter it. This stance brings this study on the middle of the continuum of subjectivist/objectivist. This research study is stemmed into the idea of social constructionism that is subjective to individuals but also with essential 'sameness' (Ashworth, 2003), that allows analyzing the concepts objectively as well. The critical realism philosophy does allow the flexibility of using various methods, and it does not limit the researcher on one, however at the same time it enables to look at the world objectively as well as socially (Fletcher, 2017).

This research values knowledge as 'social construction of reality' where the knowledge is considered legitimate because of rigorous engagement of academics in creating knowledge. The aim is to construct knowledge while understanding participants' perspective. Although, knowledge created in this way may be considered subjective and contextual and hence its validity can be questioned. However, in this research participants from various backgrounds and different parts of the world were invited to capitalize on their reflections as well as independence/ inability to change it. Moreover, analysis of various policy documents has also enhanced the validity and reliability of the findings. The study incorporates participants that have experienced a variety of possibilities around the social phenomena

under study i.e, KE and PD. This epistemological position has expanded the meaning making and knowledge construction ability and hence does not limit the scope to a case study approach.

The attention to participants' perspectives as 'knowledgeable agents' brings this research closer to interpretive/constructivist paradigm (Girod-Séville& Perret, 2001, p.14). While collecting data, I closely interacted with academics to establish an in-depth insight into their understanding of the value of KE-activity and in what ways it has developed and informed their professional practices as academics. Although these two paradigms are contrasting, McNeil (2005) suggests perceiving them as two ends of the continuum rather than two irrelevant categories. Such approach is suitable to explain the trade-offs that I as a researcher must do between different areas of research activity, such as in-depth insight and representation of a particular group (academics in this case). Although generalizability can be a concern for any interview-based qualitative study, however, such studies are important for a better and in-depth understanding of learning and development in the settings of an emerging and relatively new social phenomenon, so that the phenomenon can be further enhanced, to later influence larger groups of academics in higher education.

Driven by the research question and my epistemological position, the study follows an overall qualitative approach. Although social sciences have been commendably progressed using quantitative studies, the qualitative studies are also very relevant as they allow for in-depth reflection, a thorough synthesis of the 'socially constructed' phenomenon and 'social scientific theorizing' of people experiences (Gehman et al., 2018; Keegan, 2009).

4.4 The Design

4.4.1 From Philosophy to Research Design

The epistemological and ontological position provides a scaffolding to build research design. The whole research is driven by the research question (Girod-Séville, M & Perret, 2001, p.13), which is to inquire about the type of knowledge exchange experiences, the participants had, what value it added to inform their academic professional practices, and how it helped them shape their approach to academic responsibilities. The research question has also directed my approach, methodology and analysis. Like many other social science studies, the design for this research had been more of an interactive and flexible model rather than a fixed and sequential one; it had been "a reflexive process operating through every stage of a project" (Hammersley & Atkinson, 1995, p. 24). Although the study had a definite design structure since the beginning, it went through an ongoing process of review and assessment of its components for coherence and achievement of set goals in the given context (Maxwell, 2012, p.3; Maxwell & Loomis, 2002). The following sections describe the "integrated and interacting whole" (Maxwell, 2012, p.4) research design for this thesis.

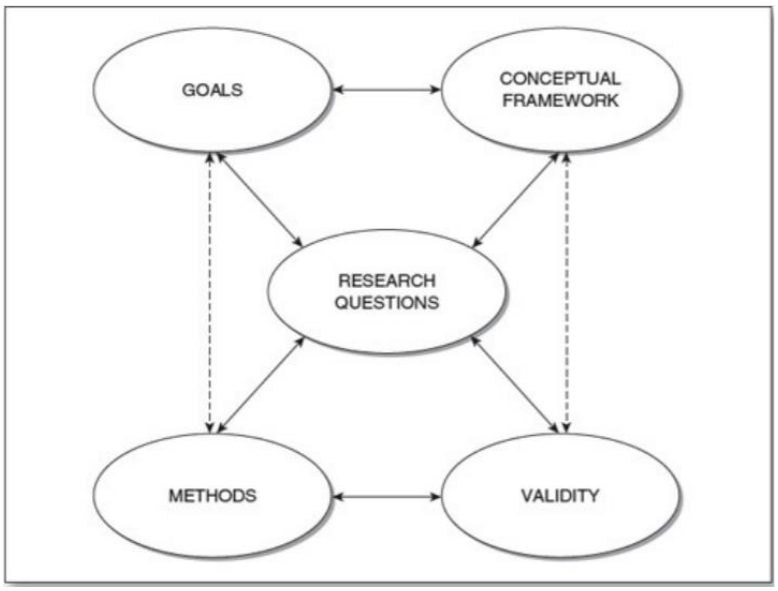


Figure 6: The Model of Research Design Source: (Maxwell, 2012, p. 5)

4.4.2 Sampling Criteria and Sampling Procedure

The research question targets a population of HE academics who are also involved in KE activities. The participants are asked to reflect on their experience and provide data for this research. The academics/participants for this research are targeted irrespective of their institution or discipline and irrespective of the type of KE activity they engage in. The study applies a purposeful criterion sampling (Suri, 2011, p.69) to choose the participants. The participants were selected following the criteria given below. An academic is selected for interview if he/she:

- has been directly engaged in activities requiring interaction with relevant industry along with his/her regular teaching and learning responsibilities.
- has a minimum of 5 years of teaching experience in higher education.
- is currently working in one of the geographical locations of Bahrain or United Kingdom
- the participant may or may not have the responsibilities of managing a team/department.

The search for participant started with reviewing the profiles of experts in the field; for example academics who presented at University-Industry conference (University-Industry Interaction Conference 2018 by United..., 2018) and also meet the criteria mentioned above. Another example is approaching members of The National Centre for Universities and Business (NCUB | National Centre for Universities & Business, 2013), those who responded within the time frame, were then requested for interviews. Some of them provided references to other academics in the field. Moreover, academics from my own institution were also requested to participate. Since the study is not related to a particular case,

criterion sampling was the guiding principle on selecting the participant for the interview. For Bahrain, participants were identified, based on the information available on the local institutions' websites.

Although the term 'sampling' is usually attached to the quantitative studies representing how a set of participants represents the whole population. In the qualitative study, however, the 'purposive sampling' (Plays, 2008; Corbin & Strauss, 2014) is also applied, where the participants or settings are marked to identify sample entities. The research that follow the inductive logic to grounded theory, such as this one, often deploys such sampling that Patton describes as a typology for purposeful sampling (2002, 2014). The application of purposive sampling, conducting semi-structured interviews and content analysis is more like a research design routine often found in studies that relates to collecting experts/ academics perspectives on organizational functions such as professional development, sustainability (Khomiran et al., 2006 ; Komba & Nkumbi, 2008; Cebrián et al., 2015) and hence followed in this research as well. Since this study analyzed the professional development of an individual while immersed in a/many KE contexts, it is the study of context, individual's learning and the link between the two. It would have not been appropriate to use survey or close-ended questions. A carefully crafted series of reflective questions were developed that are discussed later in the chapter.

4.4.3 Participants

The participants of this study are the academics from higher education and are selected on a predetermined criterion (Patton, 2002, p. 238); they have the experience of more than five years in teaching and learning and performing other academic roles requiring interaction with relevant industry, such as supervising collaborative research projects and other KE activities (Knowledge Exchange Framework Consultation, 2019, p. 8). They have been in contact with field specific industry and actively engaged in KE activities such as supervising on various projects that are linked to relevant field industry, consultancy, collaborative research, following KE framework along with performing teaching and learning for more than five years [Table 6 and 7]. They are actively engaged in academic practices that are particularly linked to knowledge exchange between industry and universities along with experience in direct face-to-face teaching.

Table 6: The Participants Category Brief

Category	Description	Number
Academics	The academics who are engaged in teaching and KE activities simultaneously or iteratively. Have been in the profession for more than 5 years, however do not have the responsibility of managing a team or a department.	7 participants that are involved in both KE and teaching activity

Academic Leadership	The academic managers who approve the design of KE activities and academics' allocation on industry projects. Who directly or indirectly contribute to policy on professional development and/or Knowledge Exchange	13 participants that are academics with above description along with the management roles and responsibilities, at various levels.

The study participants are divided in two major categories: academics and academic leadership [Table 6]. The academics are the participants directly and actively involved in academic practices: teaching and learning and research, along with knowledge exchange activities. Whereas academic leadership participants are those who also have the decision-making responsibilities for a team or department and plan, organize, lead or control activities for the department and/or team. A few examples of such responsibilities include, academics' workload management, managing professional development, recommending for policy change, and performance review responsibilities. There are two main purposes of including academics with leadership roles, firstly that their experience of managing their department and/or team members would provide a rather rich account, incorporating perspectives of other academics as well. Secondly, these participants would also provide a policy-perspective on participation in KE activities and effectiveness of PD. They are the line managers such as head of departments and/or heads of faculties, who play a key role in top-down and bottom-up decision making.

Considering the contextual settings of the research, the participants have worked in Bahrain and/or in United Kingdom higher education systems. However, some experts on the topic have the experience of additional geographical locations as well. The academics from various disciplines and from various institutions were approached to allow richness of perspectives and affirmation on the relationship between KE and PD. The participants, as mentioned above, were purposefully selected to demonstrate the diversity in adoption of knowledge-exchange activities in terms of disciplines, locations and public/private dichotomy. Table-6 presents the details of the participants, indicating their years of experience, country of origin, country of placement and responsibility level. They are given a unique identifier/ID which is used in the later chapters to include their perspective and respecting the confidentiality of their names and institutional identities.

Table 7: Participants' Information

No	Identifier	Years of Experience as an Academic	Country of Origin	Country of Placement	Subject Field	Level
1	P-1	More Than 10	Ireland	Bahrain	Marketing	Academic Leadership

2	P-2	More than 20	United States	United Kingdom	Engineering and Supply Chain Management	Academic Leadership
3	P-3	More Than 20	Egypt	Bahrain	Human Resources Management	Academic Leadership
4	P-4	More Than 20	Greece	Bahrain	Mechanical Engineering	Academic Leadership
5	P-5	More Than 20	United Kingdom	United Kingdom	Music and Arts	Academic Leadership
6	P-6	More Than 20	Greece	Bahrain	ICT	Academic Leadership
7	P-7	More Than 20	United Kingdom	Bahrain	Management	Academic Leadership
8	P-8	More Than 10	United Kingdom	United Kingdom	Management	Academic Leadership
9	P-9	More Than 20	United Kingdom	United Kingdom	Human Resources Management	Academic Leadership
10	P-10	More Than 10	United Kingdom	United Kingdom	Management	Academic Leadership
11	P-11	More Than 20	United Kingdom	UK and Bahrain	Accounting	Academic Leadership
12	P-12	More Than 20	United Kingdom	UK and Bahrain	Management and Marketing	Academic Leadership
13	P-13	More Than 20	Bahrain	Bahrain	Education and Physics	Academic Leadership
14	P-14	More Than 20	United Kingdom	United Kingdom	Entrepreneurship	Academic
15	P-15	More Than 05	Italy	United Kingdom	Entrepreneurship	Academic

16	P-16	More Than 05	Belgium	Bahrain	Marketing	Academic
17	P-17	More Than 10	Ireland	Bahrain	Management	Academic
18	P-18	More Than 20	United Kingdom	UK and Bahrain	Law and Education	Academic
19	P-19	More Than 10	France	Bahrain	ICT	Academic
20	P-20	More Than 10	United Kingdom	Bahrain	Management	Academic

4.4.4 Justification for the sample size

One of the key agendas, while planning a qualitative study of this nature is to decide an appropriate sample size and determining when the data collected is good enough. Although qualitative studies are carried out by studying 'a few individuals or a few cases (Crosswell, 2011, p. 209), nevertheless, a careful consideration was given to collecting enough and appropriate volume of data. The main benchmark in this regard, was the point of 'data saturation' and 'data sufficiency' (Suri, 2011, p.72). The interviews were conducted to ensure that the amount of data, at hand, had now started seeing the repetition and iteration in terms of findings and analytics. It required a continuous parallel analysis of interview data, as and when conducted. The caution of 'data overload' was also prevalent, to avoid the potential 'information overload', the duration of the interview, number of interviews per day where tracked throughout.

Although there are justifications that can be found across the literature on the qualitative research, the actual signal comes from researcher's own iterative analysis of the richness and amount of data available. Ritchie et al. (2003) suggests that increasing the sample size in qualitative studies can cause 'diminishing returns' and hence hamper the process and quality of the analysis with the risk of biasness on a particular theme. Guest et al. (2006) suggests, that data saturation is more likely to occur around twelve interviews or so with a very little visibility of new variants. Another consideration on qualitative studies with phenomenological approach could be that the data has allowed to synthesize the all the main factors/drivers that the study has aimed for, which according to Gonzalez (2009) occurs around the sample size of twenty. With semi-structured interviews of twenty participants, the consideration for this research was on avoiding 'diminishing returns' (DiCicco-Bloom and Crabtree, 2006), arriving 'data saturation' and 'data sufficiency' point. Nevertheless, it is common to see a sample size between twelve to twenty-five for research in similar topics for instance, Jaramillo-Baquerizo et al. (2019), investigated PD initiatives and transfer of learning by deploying sixteen interviews.

4.5 The Choice of Semi structured Interviews

The semi-structured interviews are regarded as one of the significant methods for such qualitative studies (Gioia, Corley and Hamilton, 2012, p.17). For which, designing a fit-for-purpose, valid and reliable interview instrument is equally crucial. To begin with, it is important to ensure that the interview questions remain relevant to the research question, but at the same time, do not have all the theoretical terminologies to somewhat forcing the participants to use them. Moreover, the interview guide questions are modified during the data collection process (Glaser & Strauss, 1967) as well.

The interview guide included questions that were same for all participants, however, with the flexibility of semi-structured interviews, a few more questions were asked depending on participants' length of experience, present role and/or depth of the response. Semi-structured interviews allowed the flexibility to sometime ask follow-up questions, as needed and also to allow the participants to share some information that is not asked directly but can provide an insight into their professional practice and learning. Although the interviews were designed in the semi-structured format, they were in a very 'active' form as defined by Holstein and Gabrium (2016).

In order to remain focused on the linkage between knowledge exchange and academics' professional development, alongside attention to using participants' terminologies, I consciously designed questions to inquire about the professional practices of academics such as teaching, course, assessment and programme development, rather than posing questions such as "*Do you agree that there is a link between PD and KE*…". On the other hand, in order to stay closer to the terminologies that academics, involved in such activities often use, and to avoid deviation from the main research question, I collected 'outsider perspective' (Gioia, Corley and Hamilton, 2012, p.19) to ensure the relevance of the interview questions to the research question yet providing the flexibility to record participants' thoughts. It is further explained in developing the interview guide section.

4.6 Developing the Interview Guide

The interview guide or interview protocol was developed using a careful approach that allowed for validation and relevance to existing knowledge on the topic as well as further in-depth data collection (Clark et al., 2010, p. 437). The instrument for the interviews was developed by applying a rigorous three step validation process.

4.6.1 Step 1: Instrument development

The first version of the instrument was developed by deducting ideas from the literature review that were funneled through the research question and objectives. The researcher's own academic practice in higher education was also helpful in this regard, as it allowed for an analytical yet empathetic insight into the language and terminologies used among academics to describe various academic professional practices, for example, course development, assessment design, authentic assessments etc. The first version was reviewed by the thesis supervisors and comprehensive feedback was provided that allowed for reviewing the questionnaire and transition to the second stage of the instrument development.

4.6.2 Step 2: Mapping with HEA framework

As the interview guide for this research was newly developed, it required a review for validity. The instrument that was initially built on the literature review around professional development and knowledge exchange was now placed on the professional development framework for better screening. The HEA-framework for professional practice was used as a mapping-score card to priorities the research question themes/areas and their relevance to both domains i.e, professional development and knowledge exchange, in parallel. The questions were edited to incorporate the outcome of mapping ensuring content and face validity of the instrument.

4.6.3 Step 3- Validity and reliability check- external review of the instrument

In the third stage of instrument development, three validators were consulted. The validators were the academics (teachers and academic mangers) from the marketing, finance and management, qualifications. The aim was to evaluate the instrument appropriateness, contextualization and fitness for purpose. These reviewers have more than 7 years of teaching experience as well as interaction with the industry in designing Knowledge Exchange activities in similar settings.

Table 8: Validation Experts

Reviewer	Description	Country of Origin
Reviewer 1	Academic Programme Manager-Marketing Lecturer of Digital marketing Industry Projects supervisor	Ireland working in Bahrain
Reviewer 2	Ex. Academic Programme Manager-Management Ex. Manager: Continuing Education Industry Projects Supervisor Lecturer of Strategic Management HEA-senior Fellow	New Zealand working in Bahrain
Reviewer 3	Programme Manger Industry Liaison Lecturer of Financial Analysis	Bahrain working in Bahrain

4.7 Conducting Pilot Interviews

Interviews were conducted with three reviewers to pilot test the instrument. It allowed the researcher to refine the questions and established a manageable pace and order. The participants were asked for a feedback on the experience of interaction, right after the interview. This helped in avoiding researcher's biases and researcher's error. To enhance the validity of the instrument, the pilot interviews were done with academics from other schools and teaching on other qualifications. For the pilot and validation phase, the participants were selected from the same institute that provided a same frame of reference for the pilot testing, however, since they are from different countries and had the teaching experience from various countries, the feedback allowed for diversity of opinions that helped enhancing the validity of the instrument. Apart from audio data, the research incorporates the analysis of reports and documents that are relevant to the topic. These reports and documents include progress reports on Knowledge Exchange, accounts of Professional practice and Policy reviews that were recommended by the participants of the research. The documents were analyzed as part of the overall thematic analysis.

4.8 Data Collection Processes

The data collection process, for this interpretive grounded theory is explained in the following steps (Clark et al., 2010, p.437). The potential participants were contacted via emails, in-person communication and Linked In. The potential participants were given the choice of in-person or Skype interview. On the acceptance of invitation, a comprehensive email was sent to elaborate the purpose of the study, introduction to conceptual framework and the set of questions. They all were placed in a document called 'interview guide'. However, the emails/ LinkedIn messages varied in the length depending on the participants' inquiries. All participants, except for one, showed their consent in audio recording the entire interview, for whom written response was recorded. The summary of their talk was also shared with them, wherever requested. The interviews were face-to-face and one-to-one. However, some of them were conducted on skype where it was not possible to meet them in person. The interviews were carried out following good practices (Anderson, 2009); (Bryman and Bell, 2011); and (Jepsen and Rodwell, 2008).

4.9 Developing Data Structure and Data Analysis

4.9.1 The analysis strategy chosen

The large amount of data in qualitative studies is overwhelming sometimes (Cohen et al., 2011) and the fluid and flexible research design of qualitative studies can be sometime challenging to manage (Bryman, 2012). This study has applied an overarching thematic analysis that enabled making sense of data and deriving complex links. The data analysis was carried out by first developing codes and then themes followed by identifying the links between them (Rapley, 2011; Cebrián et al., 2015). The other analysis approach that I considered was 'comparative logic' (Eisenhardt, 1989) that allows theory building and testing based on variance and relationships. However, it was not found appropriate for the given study as the data is about reporting individuals' personal accounts of reflections and practice rather than quantitative measures and facts. Another reason for choosing the inductive analysis was its

very nature of structuring data to identify themes and dimensions rather than building models on measures and constructs of comparative cases.

4.9.2 Data minimization, coding, and distillation

The data, for this research, was exported and coded in the qualitative data analysis software NVIVO 12 (Clark et al., 2010, p.407). The NVIVO software allowed for a more organized approach to data analysis (Soliman & Khan, 2004, p.7), comprehensive data management and visibility. It also enabled data visualization and developing framework. The analysis was carried out following the guideline provided in the software package and in the light of Gioia's approach to grounded theory known as inductive logic (Gehman et al., 2018, p.3).

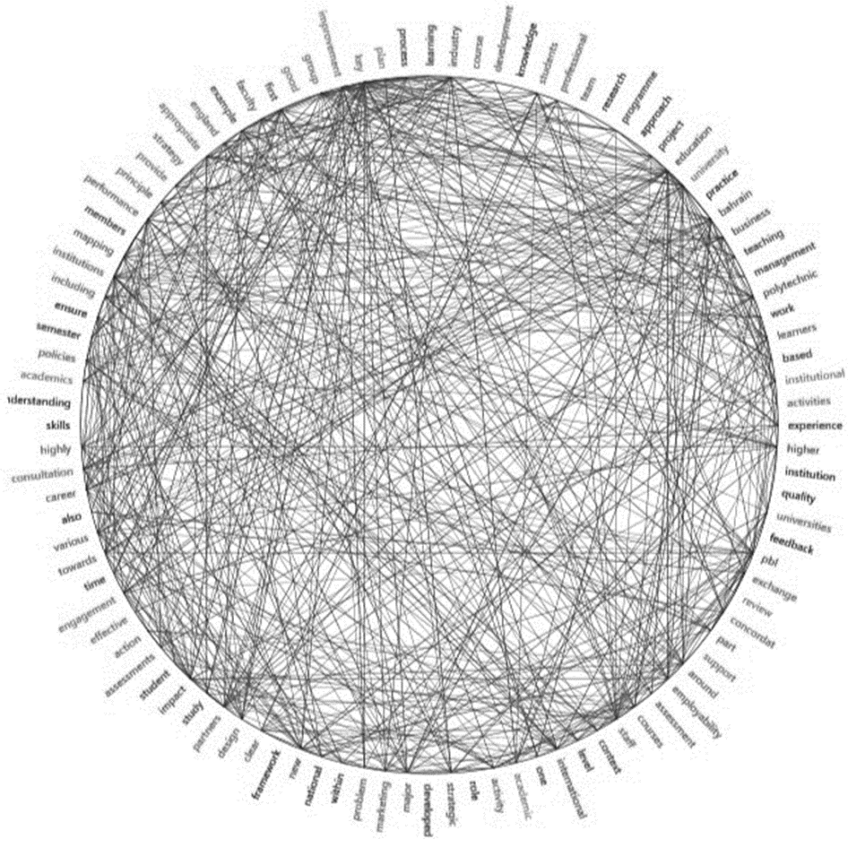


Figure 7: The circle graph before categorization

Beginning with the key research question, the 'qualitative data analysis by coding' (Strauss and Corbin, 1998) was adapted; a coding strategy was developed (Braun and Clarke, 2006) to minimize data, using qualitative-interpretive (Yanow, 2007, p.407) method. The data was first coded following open coding (Bryman and Bell, 2015); (Strauss and Corbin, 1998). These participant centric nodes were then ordered into concepts followed by identifying themes and finally identifying the dimensions (Corley & Gioia, 2004; Braun and Clarke, 2006; Van Maanen, 1979). The circle graph [Figure 7] shows hundred most frequently appeared words, which evidenced the need for a more sophisticated data minimization

strategy. Following Bryman and Bell (2015) and Strauss and Corbin (1998) data was minimized into categories and themes. The synthesis in the form of second order themes and dimensions, provides a researcher's centric view of data; Figure 8 indicates an example of such data minimization that was adapted for this study.

There were approximately sixty-five, first order categories that emerged from the data which were then coded into 2nd order themes; which later, in the light of research goals and question, distilled into dimensions (Gioia, Corley and Hamilton, 2012), [Figure 9] and [Figure:10].

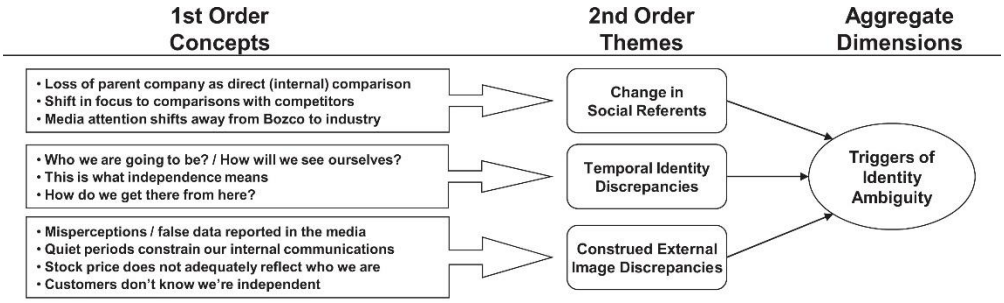


Figure 8: A Sample Data structure (Gioia, Corley and Hamilton, 2012, p.21)

4.9.3 Making Connections

Following the 'systematic approach to inquiry' (Charamz, 2017), this research is relying on grounded theory for systemization of thinking (Morgan, 2015) and applies Gioia's inductive logic to do so.

Once the data was organized and data structure was emerging, the graphical representation (boxes and arrows) of the concepts was developed, fully incorporating insights provided by the participants and hence completing the loop of inductive reasoning by developing the relevant model. This model chases not only the "deep structure" of the concepts as Chomsky (1965) so famously put it but also the "deep processes" (Gioia, Price, Hamilton, & Thomas, 2010) in their interrelationships. The study proposes a model of six dimensions of fit, at individual and institutional level, that are needed to enhance academics' participation in KE, further details are given in findings and discussion chapter.

Following Charmaz's definition, this study can be argued applying a relatively 'new' perspective of PD to the KE-function, rather than only applying a pre-approved theory. An 'inductive, comparative, iterative and interactive' (Charmaz, 2007, 2017) approach was adapted to deal with data and transition between data, analysis and interpretations. Charmaz explains the logic behind, by saying that it is based on continuous comparisons and coming back and forth from data to codes and to the concepts. She also emphases the importance of the grounded theory for data analysis and advocates it as an organized yet flexible approach to extract 'conceptual understanding'.

4.10 Journey from Data to Analysis

This research, like many other, involves cycles of inductive and deductive reasoning (O'Leary, 2007, p.2). My journey from data to theory has been through following the inductive logic as an 'interpretive grounded theory approach' (Clark et al., 2010, p.397). The focus has been on the in-depth analysis of the informants/ knowledgeable agents' (Gioia, Corley and Hamilton, 2012, p.17) understating and reflection of their experiences while interacting with industry and learning in the processes. As the research investigates professional development and KE, it was logical to find how and what those human beings have been through during the process of transformation which makes this project more inductive. So, once the data was collected the process of data minimization, coding and analysis began.

The analysis phase had been largely inductive where codes to concepts and then to themes are connected (Glaser & Strauss, 2017). Such analytical inductive approach is considered credible for qualitative research, particularly for university-industry collaborative context (Darabi, 2016). Following Gioia, Corley and Hamilton's assumption that the participants of the research are the source of knowledge; actually makes the researcher more of a 'reporter' than an analyst, at this stage. The researcher do not allow his/her own understandings to intervene in documenting the experiences of the knowledgeable agents. This nevertheless, does not limit the researcher's role to a merely being a reporter, Gioia presents another assumption that the researcher him/herself are knowledgeable agents too and they perform the responsibility of analyzing data to highlight concepts by systemically evidencing informants' experiences on scientific criterion (p.17). Such inductive approach to grounded theory is not new or unique to this study, Johnson (1998) claimed that the interpretive research methodological approach embodies analytic induction, the principles of which focus on the generation of theory from the observation of the empirical world of the participants. Thus, it facilitates the given research project by developing a practice-based theory or model concerning the academics' professional development and establishing another perspective on knowledge exchange between the two sectors, industry and higher education (Darabi & Clark, 2012).

This research, like many other social and educational research work, acknowledges freedom for individuals and groups to sustain their perspectives. The development of the research design and data collection instrument was informed by in-depth literature review and key underpinning concepts that were deducted from the existing theory. In parallel to this some unexpected findings, that Charmaz (2017) calls 'surprising findings' were linked back, abductively, to the existing theories. The outcome of the research is based on Gioia's systemic approach to grounded theory articulation (Gioia, Corley and Hamilton, 2012).

4.10 Validity, Reliability and Generalizability concerns

Due to the qualitative nature of the research, the topic of validity and reliability is addressed throughout the data collection planning, execution and reporting phases. I started off with the very basic question of how I know that the research design will bring comparable results if repeated in other settings, reliability, and if this is the right data to achieve the set research goals, validity.

The topic of validity, in qualitative researches, deals data as accounts of experience rather than objective data. So, for this research, I developed questions in a way to ensure '**descriptive validity'** (Maxwell, 1992) that is to make sure that respondent did not missed and/or added any information that did not happen. Although it is hard to phase it out totally, as the interview might have taken place after some time when it is very much possible that respondent did not remember each and everything. Since the respondents were actively engaged in the learning, it can be argued that they would remember at least what they learned and how they learned. Another validity concern was the **'interpretive validity'** (Maxwell, 1992) that includes the possibilities of respondents' inability in expressing their sense of autonomy, achievement and success in words. To confirm to this, I first reviewed the profile of the respondents to be conscious of issues such as their language ability, I used simple and easy words in the interview questions and repeated the questions in simpler form, if I had to. I included some opening questions that helped me know their ability and willingness to express their feelings and thoughts. The third validity issue, I focused was the theoretical validity or often known as **content validity** (Brod *et al.*, 2009) . It refers to the confidence in the participants' account or experience as the true explanation for the model, I was aiming to propose. To care for content validity, I carefully crafted the questions on the HEA-fellowship framework of academic practice. The questions were reflective questions with clear identification of the opportunities to allow participants including content related yet in-depth answers. The questions were then executed through a 'validity check' or a pilot test run, that is explained in the section 4.6. Moreover, the semi-structured interviews allow the flexibility of asking follow-up questions to ask for further explanations (Maxwell, 1992).

The issue of **reliability** in qualitative research, is dealt with a little flexibility as it is difficult to reproduce same findings on a social phenomenon even if conducted with the same participants, the second time. Having said that, a reliable research design would not give entirely opposite results, if repeated in another similar contexts (Carcary, 2009). For this research, reliability was enhanced by systemically analyzing the data, as explained in the section 4.9 and 4.10, and also by pacing my interview questions in a way to provide ample opportunities for detailed discussion of participants experiences (Lewis and Ritchie, 2003).

Another common concern on the quality of qualitative research is on its **generalizability**, i.e., how confident are we that the inferences of this research represent wider or entire population of that group? The decision of 'purposeful sampling', as explained above, rather than random sampling allows for representation from various groups for internal and external generalizability Maxwell (1992, p.293), hence participants selection was done on a criteria that is explained above. For external generalizability, I selected participants from different schools and or subject fields who have taken part in KE activity such as from Engineering, web Media, marketing etc. Moreover, as the participants are from different levels of interaction and autonomy (academic in direct contact, managers/leadership, experts) it provided different angle on the phenomenon and hence affirmed internal generalizability (Fielding and Fielding, 1986). The respondents are from two physical locations, that is UK and Bahrain, however, they have the experience of working in different places and are from 8 various nationalities. As this research is not categorically follows objectivism paradigm, the validity criteria for the results of this study will be

credibility, transferability, dependability and confirmability (Shenton, 2004) that I have used to rule out any biases and validity issues. For example, to avoid biases that could have risen because of my personal interests and motives that could have implications on validity, I would like to mention that I have not taken part in any KE-activity for past three years that had allowed me to keep my experience silent and rely on current responses. The ' key informant bias (Pelto & Pelto, 1975, p.7) that can potentially occur in the qualitative studies, it occurs if the researcher based a large amount of the analysis on the information provided by a few members. In order to account for this bias, participants were selected from various disciplines, and institutions with a very different type of KE experience and very different approach to professional development. Moreover, the complete interviews rather than chunks were incorporated in the analysis that allowed for rigorous analysis and capturing a complete picture.

The data collection was spread over the period of four months and no more than two interviews were planned per day. It allowed for dissemination of information and continuous reflection on both data and data collection process. It was made sure that the interviews were carried out at a place where the participant feel comfortable. If the participant was in a shared office, a separate venue or time was arranged as needed.

4.11 Ethics

The application of a robust and rigorous ethics structure is mandatory to demonstrate adherence to the University of Bath, code of good practice in research integrity (University of Bath, 2017). It is pillared on the principles of "honesty, rigor, transparency and the care and respect of all participants" (University of Bath, n.d) and guides researchers to follow the path of inquiry with mindfulness towards the institutions, participants and researcher's own image and dignity. The principles are broadly about adherence to protocols, transparency and unbiased approach in all aspects of research process. The pioneering nine ethical principles in the codes (Bell and Bryman, 2007) provided me the framework and a reviewing lens in collecting, reporting and analyzing data. As per British Education Research Association (BERA), the studies that are related to education, such as this one, are broadly considered non-risky and non-problematic if researchers take the responsibility of active and iterative assessment of situations and contexts while making decisions throughout the research project (2018, p.2).

The ethical consideration for any management and business study are largely about being conscious of direct and indirect stakeholders' position in the form of using their information, reputation, values and time. Overall, the institutes of higher education share a similar philosophy and principles when it comes to conducting and reporting research ethically. The research fully accounted for the respect for the participants, their institutions, the organizational and experiential knowledge shared and the academic freedom. Ethic of respect for the participants was exhibited through seeking their informed consent to take part in the interviews and in the research overall. In this regard, an email crafted with a consent form for the direct participants. The participants of this research are the academics, academic managers and leaders who are directly associated with professional development and/or knowledge exchange activities, the email and consent form were tweaked to suit the participant's role and position. However, the participation had been on the voluntary basis, in all cases (Denzin & Lincon, 2011). Following (BERA,

2018), the background and purpose of the research was first briefed in an informal meeting, wherever possible, followed by an email to request consent that had the attached document explaining the purpose of the research and the scope and plan of semi-structured interviews. It also had the statement assuring confidentiality and anonymity of the identities. The participants were clearly informed that they can choose to withdraw at any time. Considering the right of anonymity of the participants, the findings and analysis is presented by only mentioning their respective position or their job role in the organization. The interviewees and the institutions are not named. Moreover, while conducting the interview, if the interviewee has himself/herself said the name of the company, it is not reported anywhere in the findings. A very limited amount of personal data is collected; however, it is used in analysis only with the permission of the participant.

As an academic working in the same country, similar context, and somewhat similar job design, it is important to acknowledge the possibility of conflict of interest and affiliation bias (Bell and Bryman, 2007) and how these were accounted for. The participants chosen were from a different field/ degree programme that allowed to cover for any potential bias. The researcher had a good rapport with some of the participants and with some no prior acquaintance. All interviewees were given the information in the same flow and were treated in a similar manner, however, for some interviews venue was organized by the researcher and for other researcher visited the places. Some interviews were also done through Skype.

To protect indirect stakeholders such as universities and companies/industry, they are mentioned with anonymous names, that too, if needed. The other ethical issue was about referring to company names in the research who may not be aware of it. In this regard, it was ensured that the company and institution names are not included in the data representation that are mentioned by the participants. Moreover, the permission to research from University of Bath, was kept and presented as and when needed.

Chapter 5: Findings

5.1 Introduction

The chapter illustrates the findings of the research. The findings are presented, analyzed and then discussed in relation to the objectives of the study. The chapter is organized in three main sections, the first section captures the findings on the significance of professional development (PD) from academics' perspective and the areas for improvising its delivery. The second section critically analyses findings on the integration of knowledge exchange (KE), elaborating on how academics perceive KE in relation to performing their role; the third section synthesizes the link between KE and PD, emphasizing on the 'dimensions of fit' for academics' participation in knowledge exchange. The participants are referenced with their IDs as identified in chapter 4.

5.2. Perspectives on Professional Development (PD)

The participants emphasized on a sheer need of PD throughout their career and the value of PD in enhancing their professional practice and activities. There are a range of interpretations emerged in data related to participants' understanding on the importance of PD in performing their academic role, such as regarding teaching and learning and research, some are mentioned below.

5.2.1: PD to link industry needs to curriculum developemnt

The participants identified PD as a source to learn and align their curriculum to the relevant industry practices, keeping their subject specific knowledge up to date and improving their academic practice. P-4 mentioned:

> *PD was always welcomed but now it is a must for academics. Twenty years before, we would develop a course and we would know that it can run in the same way for the next ten to fifteen years. But now, every semester we have to change the courses to incorporate changes in the technology and in the subject field to make sure that they are delivering courses according to the market needs.*

At many other places PD was identified as a function to facilitate learning about latest developments in the subject field, in understanding students and industry needs and learning about latest pedagogical tools, P-11 mentioned,

In terms of professional development, for me It's developing or keeping on top of my subject specialism, which is really financial reporting and auditing……. So the way I develop myself in that area is to make sure that I understand the latest financial reporting standards, I understand the latest auditing standards, be involved in the discussions that's going on in those areas. In terms of the educational academic side, I got to make sure that I am aware of what's happening in higher education across the

globe that I'm aware of the current discussion of issues relating to pedagogy, delivery of courses, dealing with students and development of employability skills and all these things that we need in developing young people.

The participants mentioned that the knowledge about industry's present and future needs, knowledge about their problems and issues can help them shape their courses and design programmes. Although there was often the mentioning of various areas related to subject disciplines and the requirements being different for various disciplines, the notion of lack of in-depth knowledge about industry, real life case studies, practical problems was iterated in a similar fashion along with the idea that HEIs should provide opportunities to obtain that first-hand knowledge. As one of the participants mentioned, "…*But maybe more importantly for us [being an institute of applied education], where we are particularly focused on applied education, we need to be able to use the same technologies that are used in the industry".*

5.2.2 PD to learn the labor market needs

The participants highlighted the lack of knowledge about talent needs in the industry and regarded their lack of understanding as one of the reasons for youth unemployment. The academics believed that the academic community is not fully aware of the subject specific competencies that industry would require in future. The situation is found more crucial for the academics who had been into pure research, throughout their career and/or have no experience of working in the main stream relevant industry or with industry as consultants that could allow them to have a deeper understanding of the relevant and future industry needs. P-7 mentioned:

> *the challenges we face as the huge skills gap in the region, is not a surprise. We are asking people who have never worked in the industry, private sector or indeed have any real-world experience, to deliver an education that is in minds of these employers…….CPD is a broken system and it needs a complete overhaul.*

There is a shared strong realization of growing academics' responsibility in preparing workforce for the future and the question was raised on the quality of PD function in preparing academics for such responsibility. With the changing context for HE and industries; artificial intelligence and automation penetrating into our systems, the academics acknowledged that their responsibility, is evolving, to prepare the future and existing workforce by inculcating enquiry, learning and creativity. There is a realization that academics need to incorporate more practical side of subject areas along with theoretical knowledge, as P-2 mentioned, *"if you are teaching analytics, not knowing what current best practices and the tools that people are using. Then you're missing the point".* Parallel to this realization, academics also show a great concern on their own and their team's readiness to fulfill such labour market needs. Another participant mentioned, *"Global skill gap issues are one of the indicators of the disconnect between industry and academia"*. [P-4]

5.2.3 The need to revamp PD delivery

A range of formal and controlled PD activities were highlighted by academics, as useful, especially at the time of the beginning of their teaching career. Those PD interventions include, mentoring, shadowing, presenting at conferences, attending taught courses, professional certifications. Participants often emphasized on more informal, ongoing, 'on-the-job' and 'through the job' learning activities and also the opportunities where they get to *"learn from people who are working now in the industry",* says P-1. The participants, however, also identified the need to changing the PD delivery modes and methods. The traditional approaches such as controlled, series of classroom type sessions are not always considered the best way to provide PD for academics. Even sometimes, the workshop materials and contents are considered not carefully designed to meet the expectations of the experienced and mature learners. The participants reported a declining value in the formal and controlled training courses as a continuous development opportunity. The participants mentioned that they attend such events as an obligation rather than for development and learning. They presented a range of reasons such as, PD activities offered, are not always related/ customized to their own learning needs and are delivered in a 'one size fits all fashion'.

5.2.4 The need to expand the PD scope

As much as a common understanding on the significance of the PD function was evident, the lack of advancement in the PD function was also apparent. The participants mentioned that the existing limited definition of training and development does not suffice the representation of a variety of ways in which existing academic workforce, of today, is learning and developing themselves.

An emphasis was brought on the need to perhaps revisit the ways that institutions scope PD and incorporate the various ways in which academics of today continue to develop themselves and enhance their professional practice. P-7 said, "*There is a very little understanding about how teaching and learning is evolving and how subject-matter is moving at such a pace……I think CPD for faculty should be overhaul".* Another participant, P-2 mentioned, *"My honest view is that the most of it being useless and has no bearing on the reality of the job that people are being ask to do".*

The participants believed that the institutional PD function needs to be revamped to allow incorporating the many formal and informal ways in which academics continue to learn and enhance their academic practices. The idea of revamping PD was highlighted in relevance to the changing role of academics. It was often mentioned that the PD options that are available in the institutions need to be aligned to the changing job roles of academics. There has been an understanding of the changing job design of academics and an evolving set of considerations for academics to look at while performing their roles and responsibilities. For example, P-15 mentioned,

> *In academia, now there are many different roles, your role as a teacher, as a researcher and as a person who is to look at the impact, so has to interact with industry and with society…to perform those roles, PD should be offered according to what your path is in that particular moment".*

The participants also emphasized on going beyond the primary objective of PD, i.e, enhancing practices/pedagogical techniques on teaching and learning; and emphasized on incorporating a holistic

approach to PD that includes knowledge exchange and research. It was also illuminated that there is a need to incorporate a wider perspective on redefining PD and reviewing its scope to incorporate the needs of the changing workplaces and the changing role of academics. Such as with including guidance on diversity, talent agendas, understanding the wider context. Participants often mentioned the interaction with industry as a useful on-going PD activity, for example, a participant mentioned, "*For me research and knowledge exchange partnerships are the most fundamental PD activities that should be occurring".*

5.2.5 The need to make PD more autonomous and customizable.

The focus was brought on a more autonomous approach to PD, for academics. It is often mentioned that the PD activities that are chosen by academics themselves, in light of their self-evaluation, bring greater impact on their professional practices rather than the one imposed, *"gaps on their own CVs and resumes and also noticing, when they arrived and saw our curriculum, they saw that they need to develop….."*, P-4 said.

The participants attached a very high value on informal, ongoing and in-person learning within and outside the boundaries of HEIs and proposed to focus more on such initiatives for PD. A few examples that were mentioned include, learning from peers, approaching alumni to collect their feedback in improving existing teaching practices and course content, incorporating cases from existing industry, relevant practices and current issues in designing assessments that are authentic and practical.

5.2.6 Conclusion

This section concludes the findings on the significance of PD and its delivery. Academics appreciate the purpose of PD and value it as a significant function in enabling them to perform their job roles, however, a sheer need to revamp the PD function, appeared iteratively, throughout the data analysis. The attention is brought on the need to revamp PD function following the changing role of academics in the HEIs and overall Knowledge-based economy. The PD is proposed to be more versatile and customizable so that academics can participate in self-driven PD opportunities to suit their individual learning and knowledge needs, rather than limiting it to what is proposed by the institution's PD or teaching and learning department, enabling them to get the best out of PD activities.

Participants highlighted various areas that they expect PD to cover and prepare them for their changing role and HE of today. A few topics that were found common in the data are, i.e., keeping up with the subject knowledge, industry practices and pedagogical trends for the delivery of current and relevant courses and programmes. Some participants also included employability, industry skill needs, practical knowledge, real-life problems and millennials learning needs.

5.3 Perspectives on KE in Relation to Academic Role

5.3.1 The exchange relation

There is a common understanding on the benefits of KE for both HEI and industry. Such relationship of mutual benefit is advocated at the institutional level as well as at the individual levels. The participants clearly regarded KE as a relation of mutual benefits for industry and HEIs and their representatives. Another largely common understanding is that academics are doing it for a quite a long time, however they may not be given proper acknowledgement for it. P-9 mentioned, *there's a fantastic knowledge exchange, they just don't realize that they're doing it, knowledge is transferring and exchanging between the University and the relevant business and from the business to the university. So, I think that they just don't realize it".* The participants highlighted, with various examples, how industry can learn from them and how they can learn from the industry. P-4 mentioned, *"The academics, who are working on an area, for years, have a professional in-depth insight, that industry can capitalize to resolve their existing problems, issues and initiate developmental projects for future"*. The academics, on the other hand, can also obtain more 'working knowledge', 'what works' perspective, 'day-to-day' issues and problems and a better understanding of employers' expectations that can help to shape their professional practices, *"KE has a lot to offer for the stakeholders, the institutions as well as individuals",* participant commented.

5.3.2 Enhancing students' learning experiences

The data analysis indicates a direct link of participation in KE and enhancing students learning experiences. The participants, from Britain and Bahrain, highlighted the significance of their interaction with industry and how it informed their teaching practices, curriculum design approaches and hence providing an enriched learning experience to students. *"…..my interactions with the industry, feed directly into my teaching, you know, there's no way I can stand in front of an MBA audience if I didn't have those interactions, because they would talk about things, I would have no idea".(P-9)*

The participants shared various examples of using learning from industry in various in-class activities and assessments, some are shared here:

> *I use their stories and examples in my classes….sometimes I invite guest speakers to talk about how do they do their business and talk about subject-specific relevant areas, then I link it to the assessments and ask my students to analyze and evaluate that company's practice in the light of theory A/B. [P-15]*

When I teach something, I can relate it to a real case, a company who is following that particular idea or concept". says P-11.

For teaching and course delivery, P-1 mentioned:

> *you are not just relying on case studies [from the text] but also personal experiences, sometimes there are things in an organization that you are just not going to necessarily read about in books, it could be how to get things done and how to build relationships. By bringing personal*

experiences on the top of theories, you can contextualize it and explain it, rather than imagining what it would be like and explaining to students.

The participants with prior industry experience and current consultancy activities attributed their pedagogical approaches to their experience of the field, working with industry on different agendas rather than pure academic research. Some participants shared how they interact with industry to develop projects for students, that they use to deliver courses adopting Problem-Based Learning (Colliver, 2000; Savery & Duffy,1995) pedagogy.

KE and students learning experiences are emerged as a two-way relation, the data indicated an association between interaction with students for teaching and learning and KE. The participants who teach in a problem-based learning environment, indicated various success stories of how their students, learned while working on authentic problems from industry and how they provided out-of-the box ideas and proposed solutions to the industry in various fields such as marketing, ICT and management. P-19 mentioned:

Our students work on a semester long project that is scoped by us in collaboration with a particular company. They are given full responsibility for the execution of the project and achievement of goals. We advise them, evaluate them and provide feedback at different stages of the project. The students finally present their solutions to us and to the company representatives. These experiences always remain with them as part of their student-life memory.

Another participant from marketing mentioned:

> *The consultation and resulting plan helps the faculty and its management to identify priorities for the next year from a holistic perspective on the major and revisit our role to contribute to the institutional mandate. Its largest impact is no doubt on the student learning experience, whereby the programme has started building on a strong foundation of applied education and PBL principles towards highly collaborative learning experience with industry and societal stakeholders with more attention to the learners' professional identity.* [P-16]

Other participants also mentioned how interaction involving students in KE activities enriches the KE processes. Firstly, with the direct engagement of current students and secondly with interaction with ex-students who are now on various positions in the business world. Participants regraded alumnae as a highly valuable resource for formal and informal interaction with industry and provision of in-class and outside the class learning experiences. KE is identified as a means of enhancing student learning experience, throughout the data analysis, the academics also heighted the impact of their interaction with students on KE initiatives. There is an indication of how interaction with millennials and diverse students' groups served as a drive to engage in KE activities. For example, a participant mentioned about ideas for sustainability brought in by students, another mentioned about interventions introduced by digital marketing students, that was taken onboard by the relevant business. As a participant mentioned, *"the reputation of our graduates started to slowly gain momentum in industry, a shift*

occurred whereby industry became the demanding party, placing us in a far more advantageous position to negotiate meaningful projects for our to-be graduates".

In many cases, participants mentioned that students themselves actively engaged with industry and business world, to bring problems, observations and contextual knowledge to the learning that encouraged academics to interact with industry and other professional and government entities.

The participants shared examples of how KE enabled them to continuously update their own knowledge about the trends and the changing skill sets that are needed to operate in the relevant industry. The academics design the programmes, courses, assessments and contact sessions keeping those expectations in mind. Such exchange about the needs and expectations is carried out in formal and informal ways. The formal events include curriculum advisory meetings that are scheduled to brainstorm, consult and review the programme scopes and course areas. For example, P-16 mentioned:

> *Understanding the destination resulted from consultation with institutional steering committees for the business programme, consultation with previous and potential industry partners in the capstone course and personal networking in industry.*

Other participants also mentioned about formal consultation with industry such as P-1, P-3, P-6, P-12, P-17 and P-19. The participants also shared about a range of events when they collaborated with industry and conducted discussion forums, guest-speaker talks, work demonstrations for the students to enrich their learning experiences. The recurrence and intensity of such KE activities was different for different individuals and groups, the participants iterated the need for industry involvement in the designing and development of their programmes. As P-7 mentioned, *"if graduates are coming out and they [the industry] are telling them that forget about everything that you learned now here is what its relay like, then it is also telling us that the educational programme was not designed in a way that suits their needs".*

5.3.3 Value-driven research

The topic of research for impact, research for future challenges and research for sustainability were often mentioned indicating the relation between KE and research. *"Universities are encouraging their researchers to think about impact and therefore as an extension to that to think about knowledge exchange", says P-10.* Another participant mentioned, "*research is an important tool for KE*"

Academics from both Britain and Bahrain indicated the link between Teaching Excellence Framework (TEF), their research interests/ objectives and knowledge exchange. Often the discussion, was also then associated with research excellence framework (REF). The TEF, REF and upcoming KEF were referenced together while discussing the changing role of academics and universities, explicitly in case of UK participants. One example of P-10 mentioning, *"there is the teaching excellence framework, research excellence framework and the knowledge exchange framework….but the relationships of each of those activities then would allow academics to be promoted".* The participants from Bahrain also iterated the

link between applied/ industry informed research, institutional research strategy and KE activities. They also indicated the interconnectedness of the three academics areas. P-6 mentioned:

> *We are looking at some sort of two-way relation with industry, academics can provide novel solutions to the industry and industry can provide information about their problems and areas for further research to our academics. Interaction with industry not only provide professional developemnt but it is also doing my job right!*

KE is regarded as a 'test-bed' for testing new perspectives and identifying future research topics. KE is regarded as a platform for value driven research for both industry and HEIs, as it allows them to work, investigate and solve problems benefitting everyone. KE is considered a validation opportunity as well, as it brings theoretical knowledge to life, developing informed perspectives and proposing solutions; as P-15 said,

> *"interaction with industry inspires my research; my research has always come from industry, because that's how my PhD started. My research always has a route in practice and industry". P-2 also emphasized the link between research and interaction with industry by saying, "Well, if you work in the business school, if you're not engaged in practice, if your practice doesn't frame your notion of research, then, you're digging down your own rabbit hole and not following any kind of thing that's really interesting".*

The academics also realize the legendary expectation from HEIs to be ahead of industry in creating knowledge, obviously with their research role. However, with the pace of development in the relevant fields, there is a greater understanding on the need for more collaboration to prepare and face present and future challenges. P-8 mentioned:

> *its fundamental to have that relationship with industry, the world is changing so rapidly, innovation happens every day , we do not have a perfect answer for everything, we just have to interact with industry to understand what's the next step and how knowledge can be developed together, with them.*

5.3.4 Professional development

The data represents a range of indicators that echoes the significance of knowledge exchange as a learning and developmental intervention. Participants highlighted how participation in KE has enhanced their knowledge and skills that impacted their academic practices around, course development, teaching, developing assessments, research etc. Almost all participants from Bahrain and UK emphasized on interaction with industry as a learning experience. KE is regarded as an enriching learning experience for both academics and students. As mentioned by P-10:

> [it's about] *"richer experinces essentially about the life outside the lecture hall,whats going on at Rolls Royce, and whats going on at Google and how does that influence…..this sort of learning and teaching experince for individual students as well as for individual teachers.*

An emphasis was placed on development as an outcome of participation in KE and as a mean to prepare academics for research and KE. For example, "*There's lots of room to be more creative in the way we do development and university engagement", P-19 said.* The participants mentioned the learning from interaction with industry, developing themselves to perform their professional responsibilities.

Participant P-9 mentioned:

> *for me its central to my teaching, all my older research has always come from industry….if there is a puzzle I can't solve I always go back to the theory…my interaction with industry always inspires me…… when I started my leadership position my mentor was from industry……. engagement with industry is same as a client engagement in a consultancy relationship. So, you know, the same kind of training of how do you engage the client? How do you communicate, how do you stay in touch, how do you give feedback? How do you reengage the person so that kind of whole client interface issue I think is an important training for senior and younger academics. I think also formal training of showing the impact of industry on academic life in terms of, you know, just in case studies, research, ideas, teaching, etc is important as well.*

The participants highlighted that KE offers concrete learning experience that enabled them to reflect on their research, teaching practices and relevant field of specialization. Participation in KE is regarded a developmental opportunity as it enhanced their knowledge (field and contextual), skills (negotiation, problem solving and collaboration) and competencies around working in a different environment and working with vague descriptions and emerging digitization in various fields. However, all academics are not equally comfortable with such a learning environment because of various reasons that can be addressed with training and organizing preparatory events for academics that can boost their confidence to take part and learn from KE. The later section, dimension of fit, will detail those areas. There has also been often the mentioning of the experience of working in the industry (before joining the academia or working in parallel) and how that has shaped the academics' professional practices. As mentioned before, academics generally value the ongoing collaborative meet ups over more formal and structured conditions. However, the formal interactions are also well regarded as developmental opportunities such as online and personal interaction on professional platforms, conducting problem-driven research, consultancy and other collaborative projects.

5.3.5 Conclusion: KE in relation to performing academic role and responsibilities.

In conclusion, the participants advocated on the significance of the knowledge exchange, by highlighting it as an important job domain of academics. The participants, irrespective of their positions, academic career stage and location of placement iterated the central role of KE in shaping their research, curriculum and course development and designing teaching and learning activities. One of the senior participants from UK, P-9 mentioned, *"if you do not collaborate with industry then what kind of an academic are you……knowledge exchange and teaching are so intertwined, that you cannot be called an academic if you do not share your knowledge and learn from industry".* Another said*, "Academics must exchange knowledge with industry to be called academics".* The senior professors and head of

departments were found closely relating their teaching practices to the KE practices, sometimes, more than the younger participants. However, the significance was attributed to a range of benefits of KE activities that are done in both, formal and informal manner. As mentioned in the interviews, *"Interaction with industry is important to keep the programme relevant and to keep them relevant";* participants regarded KE in a variety of ways and represented a range of benefits in relevance to their role as academics that explained above [Figure 9].

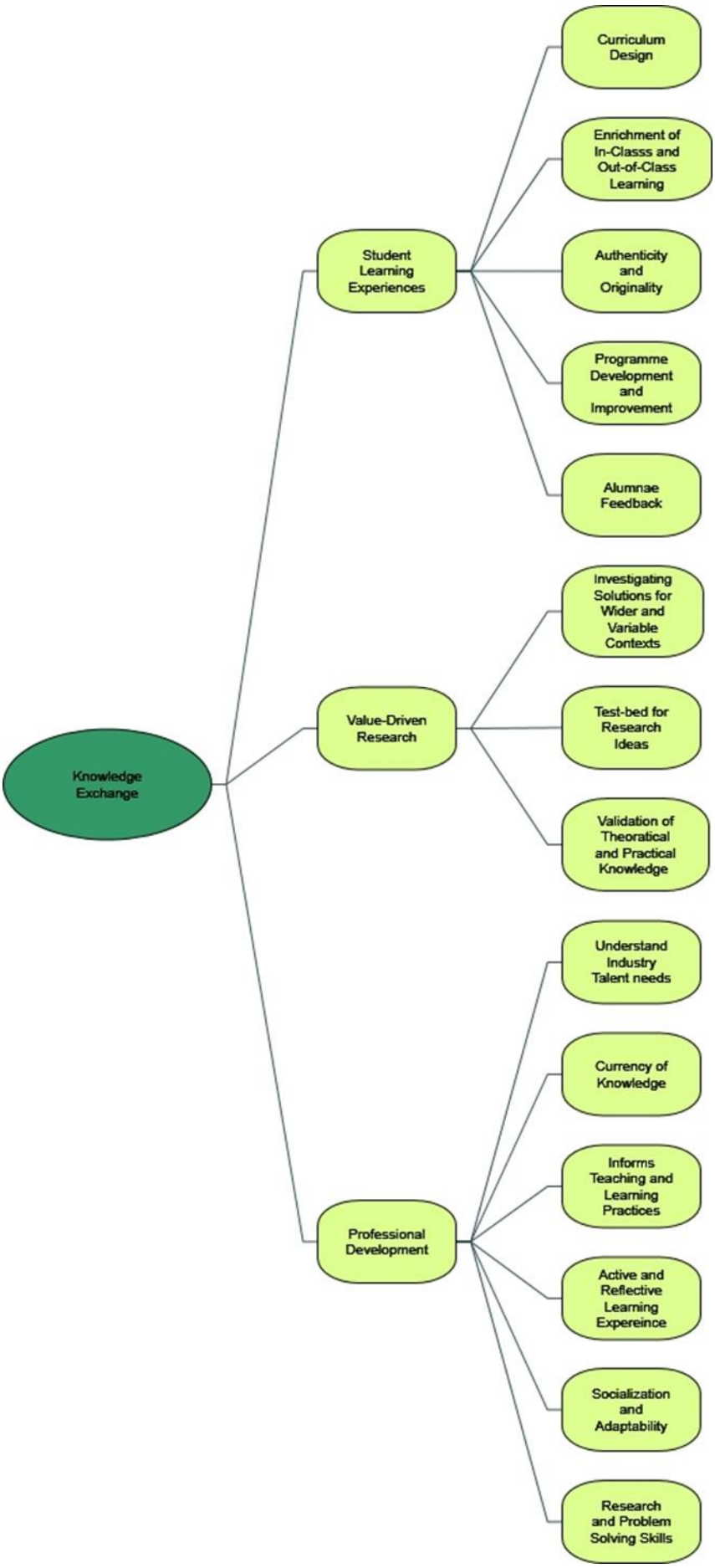

Knowledge Exchange
Student Learning Experiences
Curriculum Design
Enrichment of In-Classs and Out-of-Class Learning
Authenticity and Originality
Programme Development and Improvement
Alumnae Feedback
Value-Driven Research
Investigating Solutions for Wider and Variable Contexts
Test-bed for Research Ideas
Validation of Theoratical and Practical Knowledge
Professional Development
Understand Industry Talent needs
Currency of Knowledge
Informs Teaching and Learning Practices
Active and Reflective Learning Expereince
Socialization and Adaptability
Research and Problem Solving Skills

Figure 9: KE in relation to performing academic role and responsibilities.

5.4 The 'Dimensions of Fit' for Enhancing academics' participation in KE

5.4.1 The Need

The above section summarizes the findings relating to changing academics' job context and how KE is perceived central to the various functions performed by academics. Despite high value attached to KE, academics' and institutions' participation in such activities had not always been as visible and widely acknowledged as other activities such as teaching and advising, publications and research; P-10 mentioned:

> *I think you have a very mature way in which we value, we do, deliver and we appreciate research, it is quite mature. And universities have been, essentially, places where you can come and learn and research and those are the sort of two things that universities are synonymous with. I think part of that engagement outside of the ivory tower; the role in having impact, that role in terms of knowledge exchange, building partnerships, is still by definition always going to be immature relative to the maturation of these two other actors. So straight away. I think this [KE] has, in certain parts of the EU, certainly in the UK, certainly other parts of the world has come on significantly in a very short period of time. But research and teaching have been going on for hundreds of years.*

This section collates the findings on the factors that can be directed towards enhancing academics' participation in KE. These factors are presented here as 'dimensions of fit' for academics' participation in KE. The participants highlighted several such factors that resonated in both contexts of British and Bahrain. These factors were highlighted as the means to establish an environment that is conducive for participation in KE and in the instances of lack of alignment in these can offer challenges for academics' participation in the KE activities. Some of these, are related to academics at their individual level and some findings are addressing institutional and policy level factors. However, it is important to note that, as per the scope of this study, these considerations are identified from academics' perspectives only, related to their job environment, and are illustrated in this section.

Inspired by the theory of person-environment fit, explained in the literature review, this research has collated these dimensions of fit between academics and HEIs that can encourage active engagement in KE. These dimensions are abstracted from the academics' perspectives on perceived alignment (Wilkinson and Johnstone, 2016). Where outcome is academics' engagement in KE. The approach of presenting dimensions of fit is not unique to this study only; the topic of 'fitness for purpose', 'person-environment-fit' and 'job-fit' have often appeared in the literature on management and organizational psychology, a few examples are (Chelladurai et al., 1987), (Young and Gasser , 2002), (Kristof-Brown and Guay, 2011).

5.4.2 The Design Fit

Participation in KE activities can be enhanced if it gets a prominent place in the formal descriptions of academics' job design. Participants highlighted the fact that, some academics do not internalize their responsibility around KE as maturely as they do for the research and teaching and learning functions.

Participants argued that some academics take KE more seriously than others; and many academics, do not even consider it as part of their role to collaborate inside and outside the institutional walls, and do not regard it as a requirement. Along with the perspective on understanding the job roles, participants also highlighted the workload perspective of their job design as well. There is an indication of increased participation in KE provided it is acknowledged in the workloads. Few quotes in this regard are illustrated here, as one of them mentioned*, "My workload is all over the place".* Another mentioned, *"I don't think that academic workload is designed to fit anyone lives properly"; "I am way over my workload".* In regards to workload some participants, did mention that their workloads are designed with allocated time for collaboration with industry. Some of them regarded it as part of their teaching workload.

Some participants attributed the extent of industry integration, to the subject field, such as in this quote,

> "*Because if you're in science and engineering, you're often working in a way in which your work has an immediate industrial application. Yeah. So, straightaway you're in that space. So you've got to think in terms of academic disciplines, some academic disciplines feel more comfortable doing it, because they can see the application. Some academic disciplines are resistant to it, because they don't think that they should be doing it".*

Another participant mentioned: *"I think the biggest thing is to convince the engineers to collaborate with other expertise.* Although there was often mentioning that some subject fields have industry collaboration as a natural component than the others, often same subject fields were identified, by some participants, as directly related to industry and by other participants as not so directly related to the industry. This perhaps indicates that the subject field / nature of the field is sometime considered as a reason to not to collaborate with industry. Nevertheless, none of the participants regarded their subject fields as irrelevant or with no application or value in the real world, moreover it is hard to imagine so.

The data also highlighted the personality aspect of individuals in relation to KE, i.e., some academics are not very comfortable with the idea of being proactively engaging with the world outside the university and sometimes even outside their offices. However, the reasons given were always related to the attitudes. For example, the attitude challenge of 'professorship impression' and considering themselves as the expert, requiring no one to tell them about the subject field, was highlighted by participants from various fields. Nevertheless, or themselves being unwilling to engage with the relevant stakeholders.

In a nutshell, participants were found of the opinion, that in spite of personal preferences, engagement in KE can be increased if it is explicitly indicated as part of job description and workload allocation.

5.4.3 The HR Fit

Another angle of institutional direction, impacting academics' participation in KE, was around the indicators used for academics' promotion and incentives decisions. One participant mentioned,

> "*your scholarship, especially in elite institutions is primarily the driver for promotion and rewards……why don't people engage with how to be a better manager, because their career will be more quickly advanced by publishing in the administrative science quarterly as opposed to doing ten management training programs…..".*

Participants mentioned that clarity on how participant in KE will be acknowledge and valued by institutions will increase the participation in KE activities. Another participant mentioned, *"the incentives provided to academics to go to industry, it's not always part of the normal workflow, they're going to work outside of normal working hours, and therefore maybe being paid extra for this"*. Data indicates academics' concerns on time, energy and skill investments, and they would want to know how those efforts are acknowledged. As one of the participants mentioned, "*there are rarely credentials associated with industry insight".* The participants, irrespective of their subject field and location, iterated that the fit between the expectations and acknowledgements needs to be established and communicated. Although *"there are a number of UK institutions that now allow their academics to be promoted to become a professor ultimately by their work that they did with the industry" [participant quote]* as 'professor of Practice', however, a need for a more tangible and clearer link to HR functions, is resonated in the data; such as inclusion in the workloads, PD hours, performance review and driving decisions on promotions, awards and incentives. This concludes that academics would participate in KE if it is an explicit part of their performance review, promotion decisions, Key performance Indicators and other HR decisions.

5.4.4 The Development Fit

Another reason, appeared in the data, on why academics hesitate to particiapte in KE activities, is because they believe that they are not ready to engage with industry. Sometimes because of the 'fear' to face the industry and look outdated; *"there's often a fear or resistance because I've never done it before". P-1 mentioned:*

> *the initial reaction is fear and resistance, because they just want to lift what they did previously and make it work here; in that situation, you really have to show the person the value of it, and not just throw them in……but also help them learn and adapt the new setup of course delivery.*

The participants mentioned that some academics who are willing to engage in KE, do not necessarily have those skills and competencies that are needed to operate in a slightly different world. They need to be provided proper guidance and training. As P-14 mentioned,

> *……the univisristies are required to help those academics build relationships with industry, understand the difference in speed, language differences between university and business, you are trying to think and encourage academics……*

A discussion is emerged about the academcis who worked in the academic environment throughout their career, they published research work in academic platforms only and interacted with other academics. They do not get the exposure to working with external, non-academic professional environment and synthesizing issues from various other perspectives and hence need a proper orientation and development programme. The cross-cultural orientation of preparing academics is also evident in the data. Academics, coming from different cultural background, possess different level of social capital, a cultural orientation to the business world of the targeted country and training on cultural approaches to socialization can help them to participate more actively in KE activities. There are a several areas identified in the analysis, that needs to be addressed with PD function to prepare and orient academics on KE and encouraging their participation. These will be discussed in the next section.

Another aspect related to meeting their developmental needs was around increasing expectations on academics part, ambiguity around their role and weak alignment of PD function to the changing job expectations. As P-15 mentioned:

> *I think it's the problem of managing time, managing student's expectation, managing many courses and managing research so if you do both these type of things and the fact that the expectation is always growing in terms of apply for grants, have an impact; these requires a lot of time of course, I think you don't have to do all of that at the same time. Still, it's very difficult to manage so many different requests at the same time and you know, you have to go to the conferences. It's a lot. It's all in terms of the time you spend, and the pressure, and the emotional element, managing rejection to journal, if students are upset so it all requires time and emotional energy. We are not trained on that at all.*

Both in the Britain and Bahrain, participants coming from other countries faced challenges in establishing network, they do not enjoy the same social capital as their local counterparts and mentioned the need for such learning. The participants mentioned the need for training and development opportunities to enable them to collaborate with industry representatives. The areas of further development are detailed in the discussion chapter.

5.4.4 The Governance Fit

The regime of changing expectations from students was also highlighted by the participants; for example, *"I have found a weird twist in the last five or six years where if you try and make it practical and share the nuance of reality, quite often students don't want that, they want a simple or an essay to follow task, which worries me", says P-14.* There is an indication that although academics want to design assessments around real life complex and semi-defined situations, they are somewhat limited by the attention they are expected to be given to what students want. The students are concerned more about

earning credentials than learning, they want to earn a degree and often demand for easy to do, less complex assignment rather than problem-based research project that would require dealing with ambiguity and creativity. P-2 mentioned, *"Students expect to receive easy to follow instructions and complete the assignments that help them get good grades and earn the qualification".* Such situations are then linked to the need for a clear institutional direction to guide academics in their decision making on designing and implementing learning from KE, as another participant mentioned, it is important to *"keep the curriculum generic enough to allow scope the projects to cater industry expectations and students learning outcomes, at the same time".* The review of many successful examples of industry-infused course delivery, given by participants, indicates that it would have not been possible without a flexible and autonomous governance system established by the institution.

The topic of support from institutions was echoed in other places as well. P-15 mentioned, "*we don't have much options, this mainly left to us. We do have a center that can help us develop a relationship, but you have to go, you know, with a particular idea, you have to already organize something and then they have to develop it".* Attention was brought to establishing a more robust advisory support system, at an institution level, that was indicated as needed to help academics in identifying opportunities for establishing collaborations in the local and regional industry. Some participants did mention about having a curriculum advisory group for different programmes, who is contacted occasionally. However, it does not appear to suffice the need, one of the participants mentioned, *"……[the skill gap] can only be closed by working together on co designing curriculum, teaching, assessments, you know, the assessment of young people, the only best way of assessing young person is a real world assessment".*

The need for clarity on institutional direction along with established systems and procedures for the same, was a recurring area of concern. The participants mentioned that they need clarity and they want to know more about, the extent to which the institutional leadership wants to involve industry and what they want to do about it. The participants, that are on the leadership positions, often compared various HEIs on practical actions taken by them. One such examples is, P-7 mentioning:

> *So if you look at that picture, over the wall, there, you'll see a picture of some buildings, it's actually innovative way in physically placing a university that is surrounded by industry startups as a cluster; and that is how high performing institutions work. So it's, about working, co-creation, co-development, collaboration, you know, students working with employers, employers working with the students, academics spending time in industry, industry spending time with academia. So, this is very fluid kind of knowledge exchange, that goes on. And it's, you know, it's not it's a seamless process. [P-7]*

Another participant from leadership position mentioned, "*The HEIs, that are more forward looking, will be willing to designate time for academics to work in industry and gain practical experience".* This also indicates the provision of institutional support in terms of 'human and financial' resources, which was indicated elsewhere as*, "Obviously, hiring more staff always helps in terms of freeing the current staff to develop themselves, but also bringing new experience".* The mentioning of '*budget*' and institutional willingness for initial spending, was also often brought up. HEIs need to position themselves on a

continuum of *"being an education provider and a consultant"*, one participant mentioned. The HEIs have the growing expectations on financial sustainability with funding constrains that has brought rising focus on earnings from KE.

HEIs leadership need to establish robust policy framework for KE in the alignment with legendary functions of research and teaching. The participants mentioned that the HEIs' direction, mission, policies and procedures directly influence its departments' planning, spending, improvement and other decisions. HEIs are required to continue to review and improve their institutional policies and practices for scholarship, performance and conformance, that are the three components of a university governance (Carnegie and Tuck, 2010) system.

5.4.5 The Strategic Fit

With the core aim of "*bringing ideas in and pushing ideas out…… [KE] calls for perpetration and receptiveness by both HEIs and industry*", quoted by one participant. As much as KE needs to be promoted within HEIs, similar endorsements are needed to help industry understand the benefits of KE. Participants mentioned that more awareness should be provided to industry, on the benefits of collaboration and time spent. Participation in KE can facilitate the role of the company's training/preparatory department, saving cost and time. The advantage of obtaining the expert opinion and consultancy services, should also be reinforced. "*The industry needs to internalize KE, it is not always easy to find such companies and efforts are needed to build a case for KE to them"*. The industry ought to be given an investment perspective on KE as how sharing information and collaboration today, can help them getting access to the work-ready talent pool in the near future. The challenge of finding enthusiastic companies was evident in both locations. Although, UK already have some initiatives such as 'degree apprenticeship', 'apprenticeship Levy' and early career researchers exchange initiatives; aiming to encourage industry involvement in KE, It is important to mention that, not many UK participants seems to be aware of such projects. It indicates a need for clearer and extensive communication between government, industry and HEIs.

One participant mentioned that, *"the industry would not be willing to continuously engage in something that is ultimately your responsibility unless they find some benefit in doing so…..and it is our responsibility to establish that".* Some participants also mentioned about collaborative groups, a designated team of researchers, comprising of experts from various industrial fields for advising academics, institutional leadership and board of directors on the future needs and demands for investigation into potentials for KE activities and mutual benefits. Another participant proposed,

> *academia, and industry, they need to create a group of people that will be responsible for investigating, exploring and finding what are the problems for the next year, for the next five years, next 20 years and 50 years. So, then we will have an umbrella for all of us….*

The strategic fit between HEIs and Industry is needed for establishing a conducive environment for academics' participation in KE (Carayannis et al., 2000).

5.4.7 The Function Fit:

"University practices lag a little bit behind industry", a participant mentioned. Data iteratievly emphasizes on the difference in operational efficiency of industry and HEIs, as a limiting factor in enahncing KE. The particpants highligheted that in terms of getting the approvals, decision making processes and workflow; operational efficiency is low in HEIs; or simply put, industrial organizaions are faster and quicker in their approvals, decisions and execution as compare to HEIs. Participants identified that the different pace at which industry and HEIs function, causes 'frustration' and 'stress', P-9 mentioned:

> *the other challenge is the time lag; I find industry moves a lot quicker than academia, to get something approved in a company may take a week or a month. But in a university, it may take a year. If I say to a HR director, in a company, oh yeah, I can get this to you in three months' time, then they may lose interest because in three months they've moved on to something else; But three months is fast for the university. Kind of like we move on very different time zones.*

The industry corporate environment is perceived to be less bureaucratic, fast and flexible in decision making and in trying new ideas; on the other hand, approval systems in HEIs are perceived longer, more risk averse and rigid that limits the pace of KE projects. The hierarchal workflow structures, slowdown and sometimes delay the processes of KE. The academics, while collaborating on KE activities, need to invest more time and energy to maximize the output, addressing the differnce of time and pace at which these two entites think and operate. This functional efficiency gap between industry and HEIs, in terms of decision making processes and workflow demotivates academics as well as industry partners. This function-fit, by no means is to say that the organizational procedures are a bottleneck. However, the amount of time, energy and emotional investment required on academics' part, because of difference of work cycles and time-zones, sometimes stop academics from parpticiating in KE. The particpants believe that KE activities can be enhanced subjecting revamping the proocess flow of internal approval and managemnt systems ensuring pace with relevant companies from industry.

5.5 Conclusion

In order to investigate the interplay between KE and PD, and if KE can be regarded as a PD intervention; the chapter has presented the findings from data analysis. The chapter has presented the perspectives on changing role of academics, PD and KE and also how participation in KE can be enhanced. The next chapter will discuss the findings in the light of literature available as well as connecting them to the purpose of the research. Following chapter also discusses implications for policy and practice, encouraging academics' engagement in KE.

Chapter 6: Discussion

This chapter is aimed at establishing links between new knowledge and existing theories and making inferences to understand implications for practice and how it enhances understandings around the area of study. Parallel to this, it connects findings with the research goals.

6.1 KE in relation to performing academic role and responsibilities:

Findings indicate a realization in the changing role and job design of academics. Academics perform a range of activities that are needed to fulfil changing job designs. The data illuminates the link of KE with enhancing students learning, research agendas and developmental responsibilities that encompasses the job of today's academics. The participants, while discussing the topic of KE, iterated it being central to other job domains. The below Figure 9, synthesizes and represents the interconnectedness of KE with other job areas of today's academic role. Another aspect to highlight is the two-way relevance of the domains with KE. For example, how research objectives are informed by participation in KE activities and how research outputs help to meet KE objectives; moreover, how KE informs designing students' learning activities and how students' involvement enriches KE processes. Similarly, academics' learning and development from participation in KE and PD to prepare academics for KE.

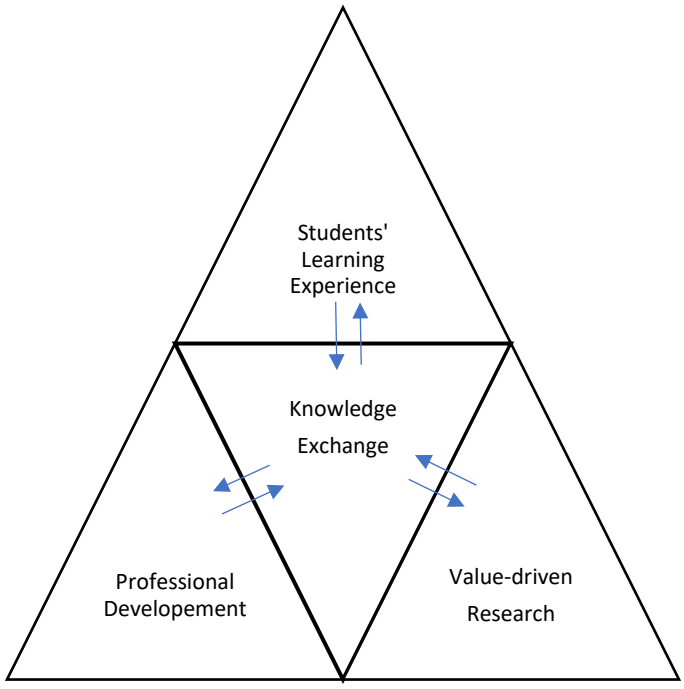


Figure 10: Knowledge Exchange and the Role of an Academic

6.1.1 KE in relation to Students' Learning Experiences

Participation in KE activities facilitates in enhancing students' learning experiences. It impacts learning activities designed for in-class and out-side the class learning. The learning experiences, inspired by KE provide them hooks to attach their learning to and enable them to focus, act and reflect when these experiences are supported by the teachers' feedback and guidance (Joplin,1995). KE provides the opportunities to enrich these experiences and link the subject knowledge to the real world. It enables academics to shape their "pedagogy in empowering students intellectually, socially, emotionally, and politically by using cultural referents to impart knowledge, skills, and attitudes" (Ladson-Billings, 1995). By relating the concepts to various contexts, academics are able to build "academic and social resiliency within students" (Fránquiz & Salazar, 2004) The academics are able to motivate students to 'reason and engage in the process of becoming' (Salazar, 2013). KE enables academics to enhance students' learning by taking industry-informed decisions on designing and delivering the courses and programmes. Sybille Reichert (2019) in her recent work on role of HEIs in sustaining innovation systems, emphasized that the programmes and courses that are designed on Problem and Project based Learning are conducive to develop the innovation-ready human capital for the future (European University Association, 2019, p.22; Khalid, 2017c).

6.1.2 KE in relation to Research

The topic of knowledge exchange and research appeared together in the data analysis. KE directly relates to the discussion on research for impact and applied research (Colapinto and Porlezza, 2011), where the value is regarded in the research to investigate and solve recent and future problems identified in the field, industry and society. As indicated in the findings, encouraging applied research leads to greater knowledge exchange and that in turns further expands the research base. Increasing contract research and collaborative research increases universities' portfolio of research and knowledge transfer (Sengupta and Ray, 2017, p. 894). The emerging literature on HE third mission, innovation ecosystem and research for impact is often underpinned on the concrete link between research and knowledge exchange (Zavale and Macamo, 2016, p. 252), along with many other factors. The topic of KE and collaboration between HEIs and businesses presented as 'open innovation' is based on the similar idea as presented in this research. With more emphasis on the role of HEIs as a key component of open innovation system, academics understand their research interests and objectives being influenced by KE. The institutional research goals are shifting away from the pure research to more value-driven, collaborative research with industry and therefore academics' research function and KE is perceived as a two-way relation wired for the exchange of ideas, solutions, funding and learning (Striukova and Rayna, 2015, p.472). KE and research are regarded mutually supportive functions and sharing the goal of creating value for stakeholders. For example, it allows academics to find authentic research opportunities, links between theory and practices and exercise their expertise to analyze existing and future issues.

6.1.3 KE in relation to PD

In the changing regime of academics' role, academics' professional development is also directly found associated with the KE (Yu et al., 2018). As indicated in the findings, KE and PD demonstrate a two-way benefit relation i.e., PD by participating in KE activities and PD initiatives to prepare academics for KE. Participation in KE provides learning and competency enhancement like any other PD intervention; firstly, as it directly relates to the profession of being an academic in HE and secondly, it is a "deliberately undertaken activity to support, provoke or assist learning" (Stewart and Rigg, 2011, p. 219).

As indicated in the findings, academics evidenced various learnings from KE that helped them enhancing their professional practice. Findings evidenced that KE impacts on all three categories of academics' professional development i.e., enhancing subject knowledge, conducting research, and improving teaching/pedagogical practices (Roscoe, 2002). Moreover, fit-for-purpose PD is also needed to prepare academics to engage in KE more effectively. Academics need some guidance, skills, and training to allow them to understand the systems and practicalities around KE and to actively engage in KE, this is further elaborated in the dimensions of fit.

KE facilitates academics in understanding and learning about the field-specific changing contexts, problems, and areas for further research. Kolb's theory of experiential learning (1984, 2014), [Figure 10] explains how adults learn by experiences and then by reflecting on those experiences. Participation in KE activities, provides means to learn through experiences and active engagement. By engaging with industry learners, the academics in this case, acquire **concrete experiences** as they take part in problem-solving and get a hands-on experience of investigation and inquiry. Academics, the mature adult learners, **reflect** on those concrete experiences. These reflections are carried out in the light of known knowledge and theory. Such journey from known to un-known enhances **abstraction** and development of new concepts and links, that academics continue **to test and apply** in their teaching, research, and other professional activities. Such as, in developing research projects, preparing teaching content and mentoring academics and researchers. KE can considerably be argued a PD opportunity that enables academics in developing and adapting to their changing role.

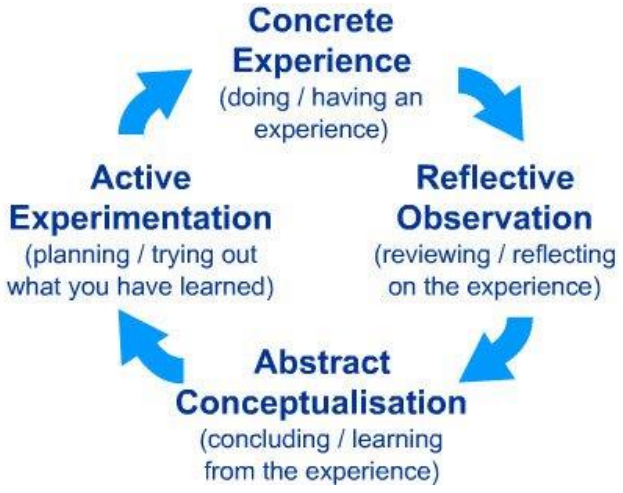


Figure 11: Kolb's Cycle of Experiential Learning (Kolb, 1984)

6.2 University Industry KE as a Professional Development activity:

Data analysis indicated that participation in KE, facilitates academics learning and development and enhances their ability in performing various roles and responsibilities as an academic. The Figure 9 indicates how KE relates to teaching and research functions and how it allows academics to develop their competencies to perform various academics practices. KE provides a reflective learning experience (Schön, 1991; Moon, 2004) that allows academics to analyze their teaching practices and content to the industry needs and changes in the operating environment of HEIs. KE is a social interaction that enables participants to learn new knowledge and soft skills as while participating in KE (Haara, 2000) participants learn by sharing and exchanging knowledge (Revan, 2012). KE provides experiential learning where participants as adults (Malouf, 2003) get the experience of real world; where they learn, analyze and evaluate the link in the courses and teaching they are responsible for to the problems and potentials in the industry. This research argues that academics learn when they collaborate with industry for various projects, as they create knowledge in collaborative settings, this is in line with the Paavola and Hakkarainen's (2005) idea, explained in literature review, that knowledge creation, acquisition and exchange are the metaphors of 'learning'.

The data analysis indicates that KE fits the evaluation criteria of any PD activity developed for academics. Guskey (2003) presented five critical levels of PD evaluation, that were all highlighted by the research participants, as present in the KE activities. The academics who participate in KE activities, regard it as a highly valuable learning activity and academics like to participate in it as it is aligned to their learning needs. There are various indications in the data on how KE can help support the achievements of HEI's goals and how it enables them use the new knowledge in designing research projects, students assignments and their teaching materials. The participants of this research indicated a direct link of the participation in KE and its impact on enhancing students learning experiences and achievement of their learning outcomes. This is in line with various recent researches on Knowledge/ innovation ecosystems that indicate how students learning can be enhanced by better integration of KE, research and teaching. While participating in KE activities, academics find themselves engaged in applying their knowledge, acquiring new knowledge (Lobato, 2012), solving problems (Cho and Rathbun, 2013) and demonstrating competencies while operating in various but relevant environments (Evans, 2014); (Botma et al., 2015).

6.3 Supporting Academics' Participation in KE: Dimensions of Fit

As highlighted in the findings, above, there are several areas that needs to be addressed to establish a job environment that is conducive for enhancing academics' participation in KE. There are six major themes emerged in the data analysis and presented in chapter 5. The model below [Figure 11], represents those themes as dimensions of fit, discussing the compatibility in supporting academics' participation in KE. As presented in the model below, the design-fit, development-fit and HR-fit are the dimensions relating to individual academics, their career, research goals and competency needs

whereas the other three dimensions are more of institutional level which are generic to academics' participation in KE. The dimensions are discussed as below:

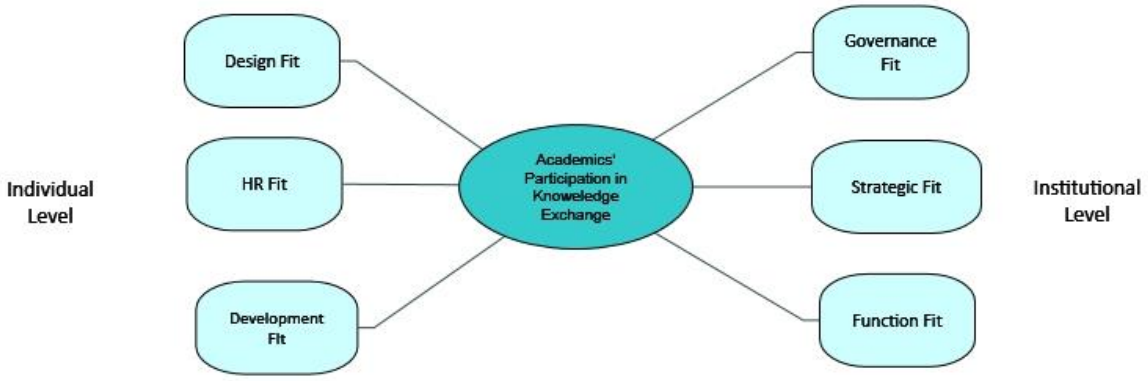


Figure 12: The Six Domains of Fit for Academics' Participation in KE

Although the dimensions are illustrated in the findings section, here the aim is to review these findings in the light of relevant literatures and from the viewpoint of other researchers and finally implications for practice. The discussion on individual level dimensions is followed by discussion on institutional level dimensions. In order to make sense of how academics' participation in KE can be encouraged, table below summarizes the relationship between academics and their workplace (Ungemah, 2015), later sections provide the details of these dimensions of fit, making inferences from the findings chapter and linking back to existing relevant literature..

Table 9: The summary of Dimensions of Fit for academics' engagement in KE

Dimension of Fit	***Academics' participation in KE can be enhanced if:***
The Design Fit	KE is formally recognized as one of the core responsibility areas, along with teaching and research and continuous development. Academic jobs are designed (Garg and Rastogi, 2006) incorporating KE, explicitly
The HR Fit	HR functions for academics incorporate KE in their decision-making framework; HR decisions such as on workload allocation (Link et al., 2017), recognition, rewards, performance reviews and promotion are made considering participation in KE activities (Winter and Sarros, 2002).
The Development Fit	Teacher training and development unit is setup to facilitate individuals' learning needs to prepare for KE role. The customized competency enhancement opportunities are offered reducing the fear, frustration and stress related to engagement with industry (RSM PACEC Ltd, 2017, p. 45).

The Governance Fit	HEI's governance and leadership framework is clearly KE-oriented (Donate and de Pablo, 2015) and academic, business and corporate sides of (Carnegie and Tuck, 2010) HEI's governance is compatible to the KE role and clearly reflects that in decision making.
The Strategic Fit	Institutional strategic standpoint is clarified on the extent and range of services to the industry (Rajalo and Vadi, 2017). There are needed endorsements, branding and trust-building initiatives rolled out to encourage industry to engage in KE. Industry perceives engagement with HEIs, as aligned to their business and Corporate Social Responsibility goals.
The Function Fit	Inter-organizational functionality gaps are addressed to keep up the workflow efficientcy (Srinivasan et al., 2006) for KE. Inter-departmental coordination (Pan et al., 2015) is enhanced, cracking the silos. There are academics' engagement protocols established by integrating KE information systems providing functional compatibility.

6.3.1 The Design Fit

The job descriptions, often identify responsibilities on teaching and research but do not always address KE responsibilities that according to data analysis, is central, to the academics' roles and responsibilities. There is a need to present KE as an important part of academics' job (Reichert, 2019), especially in the times of marketization of HE and academic entrepreneurship. Academics will take more responsibility of KE if they know it as a mandatory job area on their job description and the academic jobs are designed (Kiggundu, 1981; Garg and Rastogi, 2006) incorporating KE, explicitly. The data also indicated a fluctuation in the extent to which academics participate in KE and are concerned about their KE outputs, this is unlike research and teaching for which workloads and KPIs are more formally identified, measured and acknowledged (Marshall, 2019).

The discussion on the job design fit, poses a need for in-depth analysis of existing job descriptions and person specifications, as well, to see the extent to which they represent the changed role of academics. The data analysis indicates a changing academic job design, a range of tasks and duties that are done by academics are initiated by themselves as they see the drive and need. However, they are not always indicated in the formal job description [Table 9]. The changing environment calls for revisiting job designs. By revisiting the job descriptions and person specifications, attentions can be brought to KE at the recruitment and placement stages, which will help academics to understand it as an important part of their job from the time of role inception. It will also facilitate access to the right talent and skill sets form the beginning.

6.3.2 The HR Fit

The HR-Fit addresses the alignment between the institutional expectations from and acknowledgements for academics' participation in KE. The HR functions that are highlighted in the data analysis include, workload allocation, promotion decisions, career pathways for academics', job rotation and performance reviews [Table 9]. The academics are motivated towards their job, when roles are clear, tasks are challenging and recognition and rewards practices are well integrated (Winter and Sarros, 2002). The academics' participation in KE activities will increase if there are clear indications of how these efforts are acknowledged in the performing HR functions such as performance evaluation, promotion decisions and salary decision. These are the individual employee related functions done on frequent bases (mostly yearly) and are different for every academic. The dimension of HR-fit, resonates with a recent research in the field of HR; Mitsakis (2019), argues for *"Environmentally Integrated HRD [Human Resource Development] Strategies, Plans, and Policies"* that are needed to drive success and achievement of organizational purpose.

The environmentally integrated strategies and plans go beyond the basic assessments on the alignment with institutional goals and cost-effectiveness. It argues for a more value-driven approach to HR decisions, including attention to factors from micro and macro environment of an organization. In case of HEIs, this can be explained by discussing a balanced approach in workload allocation for research, course development, research, KE activities, PD etc. for example, academics with more time allocation for grant-related research are more inclined to participate in KE activities (Link et al., 2017). Furthermore, a review of academics' performance management system and promotion decisions need to be revisited to analyze the alignment of expectations and acknowledgment. Although claims are made on encouraging academics for KE, the academics believe that 'engagement with the community and businesses' has the least impact on their promotion in the career (Abreu et al., 2009, p. 38) such perceptions can be changed with concrete interventions. Another aspect of HR-fit is around rotational participation; how does institutions know if all academics are given the opportunity to participate in KE, if there exist a rotational plan on it, or if it is happening solely voluntarily or at random. *"There were several mentions of the value of staff movement (e.g. between industry and academia, and between Universities and Catapults) and of industry supervision of students"* (Re.ukri.org, 2018, p.5), however, institutions need to establish a more sophisticated approach to maximize academics participation and benefits of KE for other stakeholders (Marshall, 2019). Some recommendations have started to appear such as 'revenue-sharing policies, staff prizes and the celebration of success stories' (McMillan, 2019, p.16), however, a more robust approach is needed to establish HR functions that are a right fit with the changing role of academics, acknowledging (Jacb et al., 2019) and encouraging academics for participation in KE.

6.3.4 The Development Fit

The vitality of KE function, as part of academic role, is acknowledged by senior and younger academics alike. Emphasis is also equally brought on the need to align the professional development function of HEIs to fulfill the competency gaps in this regards and insitutions make efforts and investment to

preapre academics for KE. It is indicated in the findings that a lot of times, academics want to exchange knowledge with industry, formally and informally, but they need guidance on various aspects. The participants highlighted a disconnect between the PD offerings and actual job roles of academics. There is a need to further integrate PD function with the skill needs for KE and provide fit-for-purpose professional development opportunities [Table 9]. A learning and development setup, fit for preparing academics for KE, can help them cope up with the fear, frustration and stress and hence increase their willingness and participation in KE activities. This resonates with research published on the state of KE in English universities (RSM PACEC Ltd, 2017, p. 45). As mentioned in the findings, the academics need to be prepared and oriented to the KE function encouraging their participation. Some of the areas identified by participants are as follows:

6.3.4.1 Dealing with pressure: the partipants highlighted the need for support and learning on dealing with pressure of the chanigng work environmnet. It is higlighted that reaserch, teaching, dealing with diversified student groups, managing expetations of various internal and external stake holders creates pressure and stress. The provision of lenaring and training in this area will raise their confidence in enagaging and collaborating for KE.

6.3.4.2 Socialization skills: the participants also mentioned the need for academics' development in socialization skills, especially for those coming from other parts of the world. Internationalization of HE and HEIs, brings diversity in the workforce and in the student population. With international mobility of academics, academics need to be facilitated in developing their socialization skills and to operate in a diversified culture. Some academics were raised in one culture, they studied in the country of a very different culture and came to work in yet another cultural environment where norms, values and expectations are sometime conflicting to their own understanding of operating in a diversified culture. Academics' engagement in KE is highly depend on their social capital and their ability to attract industry partners, develop and manage those relations (Mosey and Wright, 2007). If academics are expected to interact with industry and external stakeholders, participants mentioned, they need to be facilitated on socialization skills including the very basic cultural orientation (Bennett, 2004).

6.3.4.3 Adaptably and flexibility: to operate in a high paced changing environment, academic managers highlighted personal development areas that they believe impact academics performance in KE such as adaptability and flexibility to operate in an environment of different pace and organizational culture. The participants, reflecting on their past experiences mentioned that KE, is like a learning contract that required more involvement among entities than, carrying out research project. Academics need to be prepared and guided to demonstrate adaptability and flexibility as a KE actor.

6.3.4.4 Learning and using the business/industry language and communication style in all forms of correspondence as it is very different from reporting in academic world. using the 'accessible language'. The communication styles and the business language of communication in academic world is very different than the communication style of business world. The word choices, articulation, justification, developing an argument is very different in the two settings of communication. The emphasis is given on

providing guidance to academics in transitioning from academic language to more business language that is access able to industry representatives.

6.3.4.5 Entrepreneurial skill and learning by doing: Academics are responsible to prepare entrepreneurial 21st century workforce for which they are expected to exhibit a more entrepreneurial approach in designing their teaching and research activities. However, they themselves are not always equipped with such skills and need development. A senior academic mentioned, *"Academics with their years of experience in the profession, tend to theorize and think a lot before acting. Academics need to learn to take risks, act and learn from their actions"*. Academics need to adapt a more activist and pragmatist learning style rather than solely relying on theorizing and spending time in over-thinking that sometimes delays KE; taking too long can cause failure in the long term.

6.3.4.6 Training on client-engagement interface: Another area of skill development for KE was identified around service management/ client orientation side. The academics job design does not require that customer/client orientation to their dealing with stakeholders. However, with growing emphasis on KE, academics need guidance and training on understanding the client-engagement interface, that can include a range of topics from communication to technology integration.

As the areas, identified in this research, signifies the need for competency enhancement, learning and training opportunities for participation in KE; Big Five personality traits have also been reported impacting the performance of academics in the UIKE activities (Yu et al., 2018). Francis-Smythe et al., (2006) also presented a set of competencies that academics need to possess to improve their participation and performance in the KE. The top five competencies in Francis-Smythe et al., (2006) are, *"Presenting and Communicating Information, Relating & Networking, Delivering Results and Meeting Customer Expectations, Entrepreneurial & Commercial Thinking and Planning & Organizing"* (p. 41).

These results bring implications for not only the training and developemnt function but also to the recruitment and selection function of academics, highlighting the need to recruit academics with the right personality to engage, collaborate and share knowledge.

6.3.3 The Governance Fit

Along with other dimensions of fit for academics' participation in KE, several factors and challenges highlighted in the data directed attention to institutional governance and its fitness for KE. The HEIs' direction, mission, policies and procedures directly influence its departments' planning, spending, improvement and other decisions. The employees need clarity on what and how the HEI is aiming to focus on KE.

The HEIs need to define their goals and procedures that will position institutions in the competitive environment as well as provide clarity for academics for participation in KE. The academics need to be clearly communicated the leadership and institutional strategic standpoint on the balance between the consulting services to the industry and being an education provider. They are not mutually exclusive; however, the institutions need to position themselves clearly to enable academics participation in KE

activities. This may lead to establishing knowledge exchange-intensive HEIs, following the legacy of categorizing teaching-intensive and research intensive HEIs.

A few governance areas include, but not limited to, attention to policy, compliance and improvement, balancing the scholarship and business orientation of HEIs and institutional autonomy and accountability. Along with establishing an integrated governance system, the implementation and execution of that system can also impact the governance-KE fit. Compliance with governmental and regulatory institutions is also a factor impacting academics' participation in KE. The academics indicated a situation of stress and uncertainty caused by an environment which is sometimes regarded as 'overly regulated'. The agenda of compliance with quality control and other regulatory reporting can create duplication and redundancy if not managed properly. The participants mentioned about the Teaching Excellence Framework, Research Excellence Framework and forthcoming Knowledge Exchange Framework, indicating a potential to emerge as an overly structured and confining context for academics. The integrated governance (Carnegie and Tuck, 2010, p.438) can provide a ground for a holistic approach to gauge KE, PD, research, teaching and learning. The study indicates a need for a more integrated and holistic approach to addressing compliance, scholarship and financial gains of KE. This will allow academics and leadership, in decision making and planning that is geared up towards a clear collective goal rather than isolated and department-oriented planning and decision-making which sometimes create confusions and conflict of interest.

The institutions leadership need to adapt a more transformational and developmental leadership approach for policy implementation rather than a policing and control approach as participation in KE is linked to facilitating and mentoring academics in learning something that was not always present in the previous century. Donate and de Pablo (2015) explain it as 'knowledge-oriented leadership'. A fair balance of bottom up and top down approach was evident in the analysis around the role of leadership for KE. The academic leadership need to understand the conduciveness for KE function from academics' point of view and make decisions considering their needs. Moreover, the implementation/ success of KE function is linked to more of a top-down approach, indicating that academics will do it if they know the expectations and requirements to do so. Although, it is not possible to claim that a standard governance model can be suitable to meet the needs of various HEIs, however, a governance model translated from the HEI's strategic planning would be deemed suitable to meet its stakeholders expectations (Tarkman, 2008). With changing role of HEIs in the Knowledge Ecosystem, HEIs are required to continue to review and improve their institutional practices for scholarship, performance and conformance (Carnegie and Tuck, 2010, p. 438).

6.3.4 The Strategic Fit

In the time of industrial revolution 4.0 disruptive technologies and AI, industries are undergoing transformational changes to compete in a competitive global environment. Some industry-fields are more prepared and prompter for KE than others (Berbegal-Mirabent and Ribeiro-Soriano, 2015). Data analysis indicates that, more endorsements, branding and trust-building is needed encourage industry

for KE and hence increasing approachability and access for academics enhancing their participation in KE.

The industry can be attracted by emphasizing on the link between KE and their corporate social responsibility strategy, the cost/benefit analysis of consultation and expert opinion on present and future problems that are provided by academics. More awareness can be generated about the benefit of mutual learning and provision of on-the-job learning opportunities for their employees. Carayannis, Alexander and Ioannidis (2000) emphasized on how KE increase organizational learning and social capital of companies. The industry also need to recognize, how collaboration with HEIs can help them in recruitment, accessing a talent pool of work-ready graduates, who are already oriented to their business and culture, because of working closely on industry-led projects.

The strategic fit between HEIs and Industry is needed for establishing a conducive environment for academics' participation in KE (Carayannis et al., 2000). The HEIs need to investigate various types of collaborators and form of collaborations (Rajalo and Vadi, 2017, p.48) that provide win-win for HEIs and Industry along with transferring benefits to students and society. In mature HE systems, HEIs and Industry are already working closely as part of Knowledge ecosystem and/ or Innovation ecosystem; more efforts are required to establish a wider portfolio of industries.

6.3.5 The Function Fit

As illustarted in findings [5.4.7], data analysis indicates the need for the functionality fit between HEI's and respecitve company's workflows and operating cycles. For the successful completion of KE projects, the acdemcis transiton between company's and HEI's workflows which impacts their own work cycle [Figure-5]. The academics' workloads are mostly developed around their contact hours with students, development/coordination time, reserch time etc. and are often done for a duration of a smester where as company's work towrds quarterly, yearly and longer cycles. The alingment and harmonay between HEI's and company's workflows impacts the academmics' ability to syndicate them with their own work. This has emerged as having a signifcant impact on academics' participtation in KE activites (Marshall, 2019). Addressing the cocnern, the diemnssion of function-fit illiumantes its impact on the academics' abilty to achieve their own work-goals (Hobfoll, S.E. and Shirom, 2000) , remain engegaged in their work tasks and create a resourceful work environment (Xanthopoulou, et al., 2009, p.242).

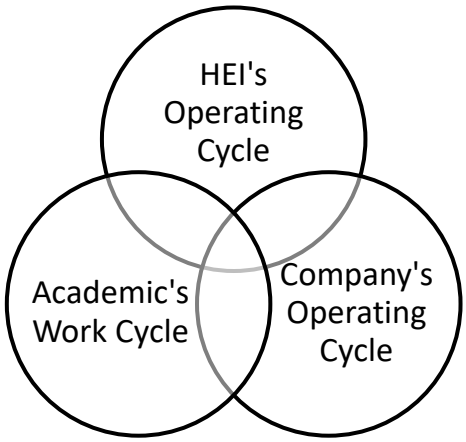


Figure 13: The Function Fit

Although it is challenging to completely erradicate this inter-organizational functionality gap, steps can be taken to enhance the comaptability and bring coordination on a papralle scale. The workflow efficiency (Srinivasan, et al., 2006) can be enhanced by an integrated KE information system, to allow for inter-departmental and inter-organizational coordination and cracking the silos. The provision of academic autonomy (Reichert, 2019, p.23) to more flexibly shape the progamme, course delivery, their research and developmental objectives can facilaite alignment with KE goals. The institutions are mostly aware that KE is a win-win-win for academcis, instituions and industry, however such understandings are not translated in the systems, workflows and operations performed by various functional units.

The institutions need to take the responsibility to provide a platform for academics from various disciplines to collaborate and learn from each other and exchange knowledge from within and outside the institution. The participants mentioned that often, even within the institutions, academics from various disciplines do not collaborate with other departments and disciplines to share trends, demands and research needs; where they can complement each other and help support further the research for impact and problem-solving for present and future needs. Although academics have identified the learning and support from peers, however this has been largely done reactively to the situation at hand. There has also been an indication of how operating units continue to work in silos, causeing work repetititon, data redundancy and wasitng intellectual capaility of human capital.

Participants have identified a need for a more planned approach to capture informal and ongoing in-house collaborative events that are valuable for senior and younger academics, from various disciplines. The need for such multi-disciplinary collaboration was highlighted by quoting examples from engineering, IT, marketing, HR and business. Another aspect highlighted was to develop curriculum and multi-disciplinary research/KE projects. The use of technologies for enhancing KE (Santoro et al., 2018) initiatives is also one of the growing research areas in the KE where various best practices are emerging to guide other institutions and intermediary entities on facilitating KE initiatives.

Provision of a well-integrated support system for multi-disciplinary academics, to collaborate and share their ideas for joint projects, is also resonated in the data. The establishment of an active engaging platform/departments to facilitate inter-departmental collaboration within and outside the institution identified significant for facilitating academics' participation in KE (Pan et al., 2015). The industry does not know the curriculum design of programmes offered in a particular institution, for example, ICT and HR. They, however, see the need for ICT integrated HR systems that can be further enhanced to fulfill individual company needs. It is the HEI's own responsibility to strategically align their operating units, in this case, faculties to capitalize on the demand and consultancy opportunities. Inter-institutional task force to facilitate liaison between local and international collaboration that continuously keep up communication with academics bridging the void between industry and HEIs and within HEIs, for departments to exchange and enhance knowledge.

Table 10: Possible Instruments for optimal Fitness

Level	**Dimension of Fit**	**Possible Instruments**
Individual	**Design Fit**	• Job analysis and Redesiging Jobs • Establsihing job descriptions and specifications, incorporating encouragment for proactive attitude, willingness to go beyond the walls of the univerisity
Individual	**HR Fit**	• Job Rotation • Workload allocation • KE integrated goals and KPIs • Promotion and rewards decisisons for academics, incorporating KE • Establishing relevant career pathways

Individual	**Development Fit**	Identifying and fulfilling the competency gaps, as per academics' individual needs:
		• Trainings on client engagement interface; such as: Learning opportunites to understand relevant business and industry lenaguage, understnading business environment etc.
		• Customized development programmes on various soft skills such as:
		  ○ Networking Skills
		  ○ Problem solving
		  ○ Socialization Skills
		  ○ Entrepreneurial skills
		  ○ Skills to work under pressure,

		• Access to a range of PD approchaes, such as apprenticeship in the relevant industry, mentoring, shadowing in consultation services etc.
Insititution	**Governance Fit**	• Leadership • Compliance • Finaincail sustainbility • Targetted allocation of resources • Attention to KE in policy making • Consultnacy/ Research/ Teaching/ Scholarship • Budget and other Resources Allocation
Institution	**Strategic Fit**	Alignment between HEI's KE goals and Strategic priorities of relevant industrial organizations, such as on: • Corporate Social Responsibility • Accessing talent pool • Allocating resources • Sharing nontangible resources: time and information • Reliance on intellectual insight and predicitve capacity of academics
Institution	**Functional Fit**	• Measures to reduce time lag between industry and univeristy adminsitrive activities • Procedures to establish digital solutions for knowledge sharing formal and informal communication between the parties.

6.4 Conclusion-Answering the research question

The study was initiated with the aim of understanding academics' perspective on PD and KE, investigating KE as part of academic practice and evaluating the phenomenon of knowledge exchange as a holistically integrated, teacher-driven and strategically acknowledged PD opportunity. The study has perceived KE as activities that are carried out to disseminate and discover knowledge, provide students and staff the opportunities to develop their skills (Benneworth, 2011; Delanty, 2002). Serving the aim, the study has investigated the academics' perspective on KE and PD and their interplay for the changing job role of academics in the HEIs of today. The overarching research question was divided into four sub-questions. The first sub-question (RQ1) was about inquiring the worth of PD function in current times. The research has found that academics attach a very high-value to an on-going and fit for purpose professional developemnt function, especially in these times of increasing and widening expectations from academics. Section 5.2 and Section 6.1 contain detailed findings in this regard. The second sub question (RQ2) was about the implications of academics' participation in KE on the PD function. This research has found that academics perceive KE central to their changing role [Figure 9: KE in relation to performing academic role and responsibilities] and [Figure 10: Knowledge Exchange and the Role of an

Academic]. Academics have provided various accounts of how participation in KE has offered them a learning and developmental opportunity and how it has helped them in enhancing their teaching and learning and research function. Section 6.1 KE in relation to performing academic role, provides detailed discussion on that. Section 6.1.3 embeds literature from learning theories to propose KE as PD opportunity. However, the study has also found that academics require a range of development and competency enhancement opportunities to more effectively engage in KE. The third sub question (RQ3) was about investigating if KE fulfills the criteria that is set for any PD intervention. The section 6.2 University Industry KE as a Professional Development activity, has claimed so by evaluating KE in the light of five critical levels of professional development evaluation (Guskey, 2003). The fourth sub question (RQ4) was about how academics can be encouraged to participate in KE. This study has proposed a model of six dimension of academic-HEI fit [Figure 12: The Six Domains of Fit for Academics' Participation in KE] to encourage participation in KE. Section 6.3 Supporting Academics' Participation in KE, discusses the dimensions in detail. Table 8 provides a summary for each dimension and s of Fit for academics' engagement in KE and Table 9 provides possible instruments for achieving the desired individual-environment fit to encourage academics' participation in KE.

The research question is answered firstly by analyzing the data to conclude findings and then evaluating these findings in the light of literature. Although the participants of the research represent fifteen different subject fields and ten different nationalities, this research has tried to capture academics' perspective on KE and PD, irrespective of their discipline and nationality. Further application and relevance of the research is explained in the conclusion chapter.

Chapter 7: Conclusion

The chapter previews this research as part of a bigger picture and where it is placed. Later sections on contribution to knowledge, practice and strategy summarize recommendations that are discussed in the previous chapter. Lastly it acknowledges limitations for this study and offers opportunities for further research.

7.1 The Wider Perspective

Under the emerging regime of knowledge-based ecosystems, expectations from HE are evolving and HEIs are learning to adapt to the dynamic setup of expectations and interdependence (Ulrichsen, 2018). HEIs of today are more engaged with society and are expected to play a more robust role in the knowledge-based, innovation driven economy. The HEIs are realizing their strategic role in establishing entrepreneurial, sustainable, and self-sufficient higher education systems. Their strategic orientation is represented with excellence in research, teaching and knowledge exchange, on local and international canvas of HE. Preparing HEIs for their changing role implies preparing academics for the changing roles, as HEIs largely rely on academics for their core functions of teaching, research and community engagement. HEIs, therefore, need to make conscious efforts to develop their academic workforce, equip them with the competencies that are in line with their institutional goals such as for employability, sustainability, and innovation. The topic of professional development for academics and need for diversifying it, remain relevant (De Rijdt et al., 2016; Tyagi et al., 2017; Sutherland, 2018; Sutherland and Hall, 2018) and emphasized in this study.

With regards to higher education in UK, university-industry knowledge exchange (KE) is one of such drivers representing governmental, industrial and societal expectations from HEIs (Cowan, 2019). The proposed indicators of KE such as *"contract research income with businesses per academic, Consultancy income with the public and third sector per academic, Regeneration and development income from all sources per academic"* (Research England, 2019, p.18) calls for a more conscious approach to understanding academics' perspective on knowledge exchange and preparing and encouraging academics for their role in knowledge exchange which is demonstrated through this research. This study has tried to investigate how academics can be encouraged and prepared for their increasing strategic role in meeting their institutional goals around knowledge exchange; working in collaboration with industries, businesses, and other stakeholders. To do so, the study evaluates the two-way link between KE and professional development and proposes the dimensions of person-environment fit for academics' participation in KE.

7.2 Contribution to Literature

The topic of PD for academics in HE, has been discussed extensively over the past century, however the research had largely been informed by the principals of teacher education, such as including, theories of teaching and learning, pedagogy and andragogy, use of technology in enhancing teaching and learning practices etc. It is very recently that PD for academics has started to be analyzed in a more human

resource management and development perspective, such as by incorporating talent and human capital development concepts in investigating development of academics. It has been often advocated that there is a need to reform and revamp the design and delivery of PD for academics by HEIs (Scribner, 1999; Jacob et al., 2019). This study has attempted to present KE as a professional development activity. It does so by establishing links in the literature based on theories of learning, knowledge exchange and development and professional development such as (Knowles et al., 1998 ; Guskey, 2003 ; Paavola and Hakkarainen, 2005; Stewart and Riggs, 2011; Revan, 2012) and (Kolb, 2014). This study has approached KE as PD that resonates with the recent studies on PD in the field such as by Cho and Rathbun (2013), Evans (2014) and Botma et al. (2015). This study evaluates KE on the characteristics of professional development presented in the literature and identified in the data analysis.

The research on the topic of university industry knowledge exchange is relatively a modern phenomenon. Although there is a mature understanding on the multihued benefits of KE for HEIs and other stakeholders, the HEIs are still learning about the possible ways to maximize participation and acknowledgment of existing efforts. The complexity and challenges around academics' participation in KE is often highlighted in the recent literature such as by Ferguson (2013), D'Este and Perkmann (2011) and Perkmann et al. (2013). This research has tried to contribute to the existing efforts by establishing six 'dimensions of fit', synthesizing academics' perspective on enhancing voluntary participation in KE activities. Although, the model [Figure: 12] is an outcome of data analysis carried out for this research, the ideas resonate with various developments in the recent times such as (Link et al., 2017), (Mistakis, 2019), (Re.ukri.org, 2018) and (Marshall, 2019).

This study attempts to marry the two fields of management and education, by incorporating theoretical perspectives from people development (HR Management) and teacher training and development (Teacher Education) to establish a theoretical framework for understanding academics' professional development in HE. This is inspired by the very need for preparing academics for their multi-facet role in the changed HE landscape that has evolved under the umbrella of marketization, managerialism, internationalization and financial sustainability agendas in HE.

This research project has tried to bring talent development and management to the field of staff management function in HE. It has tried to represent academics as the talent of an HEI and PD as a holistic talent development function, interwoven in the job role rather than distinctively looking at formal and informal PD activities. The study also recommends looking out for effective outcome driven, academic-led PD initiatives that are established to value academics participation in KE activities as a deliberate attempt to learn and enhance teaching and research practices. The study also thrives to extend the existing body of knowledge on academics' professional development (PD) in higher education. Although, over the past decade, several research outputs are seen covering topics such as strategic HRM, talent development and human capital development in the settings of HE; however, they mostly analyze the 'formal' professional development initiatives (Jacob et al., 2019). Such PD initiatives are often top-down (De Rijdt et al., 2016; Tyagi et al., 2017; Sutherland and Hall, 2018) and research work on these initiatives does not necessarily capture academics' perspective on PD and KE. Various

studies, that incorporate academics' perspective are often aimed at testing an existing theory such as from human Resource Management, talent management and development, in HEIs. This study has tried to establish a framework to cater to the needs of academics and HEIs.

7.3 Contribution to Practice

In line with British Fit for the Future strategy and UKRI's focus on university-industry KE, this study contributes to the HEI's practices by emphasizing on a bottom-up, proactive and customized approach to academics' PD function (Khalid, 2019). The study provides a framework [Figure 10] for re-analyzing academics' job design and intern redeveloping job descriptions and person specifications that would facilitate future talent acquisition and recruitment efforts (Stewart and Riggs, 2011; Ungemah, 2015). Another contribution to practice is by proposing six dimensions of academic-environment fit [Figure 12] that institutions can adapt to enhance academics' participation in KE. The third contribution of this study is strategically aligning KE and PD agendas and accruing KE as a PD initiative where it is proposed that academics time for KE is also acknowledged as time for learning and development. Not only it provides better resource management but also soften the viewpoint on KE from an evaluative function to a learning and development function and hence allows for trying new ideas and initiatives.

This research indicates that academics attach a very high importance to PD and to the fact that it needs considerable attention by aligning it to what academics are expected to do and how their jobs are changing. The study advocates academics' voice on delivering a versatile, customizable and fit for purpose PD function which is also acknowledged in the institutional talent management, promotion and compensation systems. This research reinforces the need for academics' involvement in designing PD functions in a more robust manner. The study has found that there is a need to strategically align the institutional PD functions with changing roles and responsibilities of academics by giving them the charge of their own development and learning, as ultimately it is meant to facilitate academics. Perhaps, there is a need to revisit how HEIs are performing their PD and other HR functions for academics, investigating their relevance and fitness for HEIs' strategic goals.

Following the need for alignment and fitness, the study concludes on formally realizing the academics' changing job; which would require a thorough academics' job analysis resulting in developing job descriptions and job specifications that represents their current roles. This would facilitate hiring talent for the future needs. Although, many institutions have started to introduce different sets of specifications, representing their focus on teaching/ research and industry engagement; further research can be done to evaluate those interventions and hence guiding other HEIs and sharing best practices.

This study has found that academics perceive knowledge exchange as central to their job roles irrespective of their leadership role. The academics on undergraduate and post graduate programmes, irrespective to the subject field, value KE as a two-way benefit and learning process between industry and an HEI. KE demonstrate the characteristics of a successful professional development intervention where academics can develop by learning on-the-job and through-the-job development interventions.

KE as a PD intervention is more valuable and relevant PD activity as compared to traditional generic information transfer style, nevertheless training on basic job role such as pedagogy, technology, educational principles remain relevant for early phases of teaching career. KE provides opportunities for enhancing contextual knowledge, subject knowledge and entrepreneurial competencies. Nevertheless, proper preparation is needed for participation in KE, like any other relatively newer job area.

This study outlines six dimensions of fit between academics and their job environment that are needed for the successful and long-term participation in KE. There are three dimensions of fit that relate to institutional level interventions, impacting procedures for KE including Governance, strategic and function fit; whereas the other three dimensions represents interventions that impact academics participation at individual level including design, HR and development fit. It advocates that academics would be interested in more voluntary participation in KE activities provided, institutions have systems and procedures in place to equip them, facilitate them and acknowledge them for their contribution. Firstly, these dimensions are deduced on the bases of data analysis and then explained in relevance to the research done on the similar topics. However, this study brings a holistic perspective on academics' job design and their participation in KE activities, which can be argued as a contribution to the field of HE management and HR practices in HEIs.

On the wider perspective, the study has tried to further the research on enhancing HEIs involvement and active participation in sustaining innovation ecosystem. It can offer application in the field of study particularly for UK-HE and other HE systems that work in alliance with UK such as in Asia and Middle Eastern countries, where satellite campuses are operating and split programmes or internationally accredited programmes are delivered. In-line with recent development in the UK higher education, especially around establishing and implementing knowledge-exchange excellence framework, attentions are given on the need to establishing an environment for academics that is conducive for participation in KE initiatives (Universities UK, 2019), (Cowan, 2019) and (Research England, 2019). The study validates that although academics regard knowledge exchange as a highly important function, it needs better governance. It is fair to say that often it is left to academics to find time to communicate, organize and liaise with people inside and outside the HEIs for KE. This study has tried to comprehensively captures those issues to streamline the procedures that are often fragmented and unclear.

This study attempts to illuminate the significance of informal and ongoing PD practices from academics' point of view and proposes a more *situative* approach to PD (Putnam and Borko, 2000) incorporating a systemic view of PD (Broko, 2008)as part of working routine. Such perspective can provide a bottom up approach to designing PD activities as per academics' individual learning needs and also in establishing an environment conducive for an ongoing PD and KE activity. Often, teacher development is done in the form of formal courses, events and programmes that are developed in response to evaluations of prior events and short-term demands such as based on training needs analysis, HEI's internal strategic agendas or a policy requirement. These more than often follow a 'reactive' approach to a PD activity or a programme. This research has tried to offer a rather 'proactive' approach by highlighting the need, dimensions and expectations, in the changing context; that can be aligned to the professional

development function in HE. Although, this research does not claim offering an ultimate solution for the emerging needs but opens door for further investigation and looking beyond the walls of HEIs. The research has tried to collate intellect from academics and share it with the academic community (Guskey, 2003).

7.4 Contribution to Strategy

The study claims that professional development, knowledge exchange and learning are linked and supplementary to each other and recommends HEIs to integrate resources for a more effective and efficient utilization of staff development time as KE time and vice versa.

Another contribution to institutional strategy is the proposal of establishing academic-HEI fit to better utilize talent enhancing institutional competitiveness to tap into the KE opportunities offered by various agencies external to an HEI. An implied contribution is towards graduates branding and employment.

The UIKE is an interaction of mutual benefit. Where universities and industries gain knowledge, money and consultancy and product and process innovation (Universities, Business and Knowledge Exchange UK, 2008). The academics in that exchange, look for "gaining insight into their own research, test the practical application of their research". that are largely considered the developmental activities enhancing academics' professional practice (p. 35). KE, informs both research practices and teaching practices (p. 37) where academics evidenced a considerable change in their academic practices such as course, programme, and teaching content development. KE when looked from the academics' perspective is linked to academic entrepreneurship (Abreu and Greenwich, 2013). KE brings competitiveness for HEIs; it provides developmental, financial and reputational benefits for HEIs. However, it requires thorough internalization by HEIs to get the best of experiences for themselves as well as their respective industries.

7.5 Limitations of the Study and Avenues for Further Research

Although this study has fulfilled all the promises it made regarding achieving the study objectives, there had been a few limiting factors that are explained here. The study has tapped into the opportunity of investigating KE as a PD activity, such innovative approach has brought the limitation of lack of previous studies (Ankrah and Al-Tabbaa, 2015) looking at these two areas together. To minimize the impact of the limitation, efforts were made by making inferences from the literature on knowledge ecosystem, role of entrepreneurial universities and professional development from management studies. It is expected that future studies will benefit from this research and further the topic field.

The other limitation and an opportunity of further research is around investigating various forms of KE separately. As the topic of KE is relatively recent access to a robust data on academics/participants' reflective experiences, segregated into each of the KE activity type would've been difficult to acquire especially within these two geographical locations, where KE is still very new. Considering the complexity around PD and KE, following research question, the study has accounted for various forms of

KE activities under one umbrella. In future, further research can be carried out to investigate the value of each form of KE activity and relevant PD initiatives to prepare academics for respective KE activities.

The study has presented the HE side of KE, which is one of the stakeholders of knowledge ecosystem, further studies can be carried out incorporating the industry side of KE and its impact on their employees' professional development function, respectively.

The dimensions of fit, presented in the study, are based on the qualitative research design; these can be further tested quantitatively such as with factor analysis to extend the research on these dimensions of fit. Other studies can be done to investigate dimension of fit for other KE stakeholders, such as industry and government representatives and if these findings can be generalized to their context as well. Further ethnographic studies can be done for various groups of KE participants such as managers, post graduate students, researchers, and representatives from industry.

Another possible venue for further research can be regarding preferred KE approaches for academics from various disciplines and the impact of discipline-specific cultures on participation in KE. Since the goals of this study was to investigate areas for improvement in current professional development practices, KE as a professional development opportunity and how to enhance participation in KE function, further research can be done about specific KE categories and forms preferred by academics from various disciplines, and a set of competencies can me identified for each of those KE activities, for which this research provides a concrete ground to build further.

The participants of the study are from nine different countries of origin, that has provided richness and diversity of perspectives however, it has offered a limitation as well, that for many of the participants, English is their second language. Although English is the only medium in which all of them teach and carry out formal business communication. In future, a comparative study can be conducted for places where more than one languages are used for formal and informal communication with industry and places where only English is used, which was beyond the research question for this study.

Further research can also be done on the criteria used in academics' performance management, progression, and rewards management systems. The study advocates for more collaboration and coordination between HR departments and faculties to establish systems that translate HEIs' mission and values into their HR functions and academics' job design. Although, this research is scoped to HEIs and academics, similar studies can be done to understand development, learning and engagement needs of other actors of knowledge ecosystem. Same design of study can be followed to further understand KE from the perspective of other KE actors such as industry and government representatives, students, auditors.

7.6 Summing up: Originality and Contribution of the thesis:

In the regime of knowledge-driven economies, the societies, industries and HEIs are learning to adapt to the dynamic setup of expectations and interdependence. Over the last few decades, researchers have emphasized on finding ways to facilitate learning for various stakeholders such as enabling their participation in knowledge driven economies. This study has tried to bring attention to developing and preparing people for their effective and efficient participation in the high paced environment.

This research takes a more of a 'progressive' and 'developmental' approach to the changing role of academics and investigates learning and developmental opportunities in those job roles; it investigates the significance of KE in an academic's role and how academics can be encouraged to participate in those KE activities. The research-based teaching (Turner et al., 2008) and knowledge-exchange for impact (Lightowler and Knight, 2013) are pillared on the idea of enquiry-led co-construction of knowledge, experiential learning, and value for everyone. This research has tried to provide a tangible and practical way of integrating these inspirations in academics' role. As explained in section 7.2, 7.3 and 7.4, this research offers advancement in understanding, implementing and strategizing Academics' professional development and University-Industry knowledge exchange functions.

This research has tried to capture the two main entities of the knowledge ecosystem, the HEIs and their academics. The study is sustained on the idea that preparing academics is a pre-requisite to preparing industry-ready graduates. The study has propagated the agenda of reinventing academics' development function to continue to progress in the changing HE systems. The study has tried to bring a holistic perspective to research, development, teaching and KE that can facilitate academics in maximizing value for themselves and their institution. The study has provided an innovative model of academics' participation in knowledge exchange, which is a contribution to the existing body of knowledge on Professional Development and Knowledge Exchange in HE. Such integrative view is unique to this study. The study has advocated for combining research, teaching and KE, and establishing a developmental job design to represent academics' job.

By answering the research question, "*How does university industry knowledge exchange attract/encourage greater participation among academics and facilitate their professional development?",* the study has tried to advocate for a more futuristic, long term and collaborative relationship within and outside the HEIs. With the emphasis on capitalizing existing talent to develop talent for future, the study promotes the idea of making a collaborative progress, together!

8 References:

Abreu, M., Grinevich, V., Hughes, A. and Kitson, M., 2009. *Knowledge exchange between academics and the business, public and third sectors*. University of Cambridge; Imperial College London. Available from: https://eprints.soton.ac.uk/357117/1/AcademicSurveyReport.pdf [Accessed 25 Dec. 2019].

Alliger, G.M. and Janak, E.A., 1989. Kirkpatrick's levels of training criteria: Thirty years later. *Personnel psychology*, *42*(2), pp.331-342.

Anderson, V., 2009. Research methods in human resource management. 2nd ed. London: Chartered Institute of Personnel and Development.

Anderson, V., 2007. The value of learning: from return on investment to return on expectation. Chartered Institute of Personnel and Development.

Ankrah, S. and Al-Tabbaa, O., 2015. Universities-Industry Collaboration: A Systematic Review. *SSRN Electronic Journal*. [online] Available from: https://www-sciencedirect-com.ezproxy1.bath.ac.uk/science/article/pii/S0956522115000238#tbl0010 [Accessed 3 Oct. 2019].

Anon, 2020. *Institutional Approaches to Enhancing Learning and Teaching - 18 October 2016 at the University of Bahrain | Higher Education Academy*. [online] Heacademy.ac.uk. Available from: https://www.heacademy.ac.uk/about/news/institutional-approaches-enhancing-learning-and-teaching-18-october-2016-university [Accessed 21 Jan. 2020].

Anon, 2020. *Fellowship | Advance HE*. [online] Advance-he.ac.uk. Available from: https://www.advance-he.ac.uk/fellowship [Accessed 1 Nov. 2019].

Anon, n.d. *British School of Bahrain*. [online] Britishschoolbahrain.com. Available from: https://britishschoolbahrain.com/ [Accessed 21 Jan. 2020].

Anon, 2020. KEF: showing excellence in a framework? - HEPI. [online] HEPI. Available from: https://www.hepi.ac.uk/2019/01/09/kef-showing-excellence-framework/ [Accessed 21 Jan. 2020].

Anon, 2019. Bahrain Labour Market Indicators. [ebook] Manama, p. 1. Available from: http://lmra.bh/portal/files/cms/shared/file/Newsletter/Newsletter(Q2_2019)-%20English.pdf [Accessed 30 Dec. 2019].

Anon, 2019. *Knowledge Exchange Framework Consultation*. [ebook] London: Research England. Available from: https://re.ukri.org/documents/2019/kef-consultation/ [Accessed 30 Dec. 2019].

Anon, 2020. *About us | British Council*. [online] Britishcouncil.bh. Available from: https://www.britishcouncil.bh/en/about [Accessed 1 Jan. 2020].

Anon, 2020. *About | Bahrain British Business Forum*. [online] Bbbforum.org. Available from: http://bbbforum.org/about [Accessed 30 Dec. 2019].

Argote, L., and Ingram, P., 2000. Knowledge transfer: A basis for competitive advantage in firms. *Organizational Behavior and Human Decision Processes, 82*(1), pp. 150–169.

Arnkil, R., Järvensivu, A., Koski, P. and Piirainen, T., 2010. Exploring quadruple helix outlining user-oriented innovation models. [online] Trepo.tuni.fi. Available from: https://trepo.tuni.fi/bitstream/handle/10024/65758/978-951-44-8209-0.pdf?sequence=1 [Accessed 26 Nov. 2019].

Asrar-ul-Haq, M. and Anwar, S., 2016. A systematic review of knowledge management and knowledge sharing: Trends, issues, and challenges. *Cogent Business & Management*, *3*(1), p. 1127744.

Barnes, M. and Caprino, K., 2016. Analyzing service-learning reflections through Fink's taxonomy. *Teaching in Higher Education*, 21(5), pp.557-575.

Barthel, F., Witthöft, S., Baic, A. and Strack, R., 2016. *BUSINESS AND SOCIETY, SOCIAL IMPACT, ECONOMIC DEVELOPMENT Bridging the Skills Gap in Developing Countries*. [online] Bcg.com. Available from: https://www.bcg.com/publications/2016/bridging-the-skills-gap-in-developing-countries.aspx [Accessed 1 Dec. 2019].

Bell, E. and Bryman, A., 2007. The Ethics of Management Research: An Exploratory Content Analysis. *British Journal of Management*, 18(1), pp.63-77.

Bennett, M.J., 2004. Becoming interculturally competent. *Toward multiculturalism: A reader in multicultural education*, *2*, pp.62-77.

Berbegal-Mirabent, J., García, J.L.S. and Ribeiro-Soriano, D.E., 2015. University–industry partnerships for the provision of R&D services. *Journal of Business Research*, *68*(7), pp. 1407-1413.

Borko, H., 2004. Professional development and teacher learning: Mapping the terrain. *Educational researcher*, *33*(8), pp.3-15.

Botma, Y., Van Rensburg, G.H., Coetzee, I.M. and Heyns, T., 2015. A conceptual framework for educational design at modular level to promote transfer of learning. *Innovations in Education and Teaching International*, *52*(5), pp.499-509.

Boud, D., 2001. New practices for new times. In Boud. D and Solomon. N, eds. *Work-based Learning: a new higher education*. Buckingham: Society for Research into Higher Education Open University Press.

Boud, D. and Middleton, H., 2003. Learning from others at work: communities of practice and informal learning. *Journal of workplace learning*, 15(5), pp 194-202.

Boud, D., Solomon, N. and Symes, C., 2001. New practices for new times. In Boud. D and Solomon. N, eds. *Work-based Learning: a new higher education*. Buckingham: Society for Research into Higher Education Open University Press.

Braun, V. and Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), pp.77-101.

British Educational Research Association [BERA], 2018. Ethical Guidelines for Educational Research [Online], (fourth edition). London. Available from: https://www.bera.ac.uk/researchers-resources/publications/ethical-guidelines-for-educational-research-2018

Brod, M., Tesler, L.E. and Christensen, T.L., 2009. Qualitative research and content validity: developing best practices based on science and experience. *Quality of life research*, *18*(9), p.1263.

Bryman, A. and Bell. E. 2011. Business research methods. 3rd ed. Oxford University Press

Business, N., 2019. *State of the Relationship 2018*. [online] NCUB. Available from: http://www.ncub.co.uk/what-we-do/state-of-the-relationship-2018 [Accessed 20 Dec. 2019].

Caffarella, R.S. and Daffron, S.R., 2013. *Planning programs for adult learners: A practical guide*. John Wiley & Sons.

Carcary, M., 2009. The Research Audit Trial--Enhancing Trustworthiness in Qualitative Inquiry. *Electronic Journal of Business Research Methods*, *7*(1).

Carnegie, G.D. and Tuck, J., 2010. Understanding the ABC of university governance. *Australian Journal of Public Administration*, *69*(4), pp.431-441.

Cebrián, G., Grace, M. and Humphris, D., 2015. Academic staff engagement in education for sustainable development. *Journal of Cleaner Production*, *106*, pp.79-86.

Charmaz, K., 2017. An Introduction to Grounded Theory, London: SAGE Publications Ltd. Available from: http://libproxy.bath.ac.uk/login?url=https://methods.sagepub.com/video/an-introduction-to-grounded-theory [Accessed 9 July 2019].

Charmaz, K. and Belgrave, L.L., 2007. Grounded theory. *The Blackwell encyclopedia of sociology*.

Chelladurai, P., Scott, F.L. and Haywood-Farmer, J., 1987. Dimensions of fitness services: Development of a model. *Journal of Sport Management*, *1*(2), pp.159-172.

Jaramillo-Baquerizo, C., Valcke, M. and Vanderlinde, R., 2019. Professional development initiatives for university teachers: Variables that influence the transfer of learning to the workplace. *Innovations in Education and Teaching International*, *56*(3), pp.352-362.

Cho, M.H. and Rathbun, G., 2013. Implementing teacher-centred online teacher professional development (oTPD) programme in higher education: A case study. *Innovations in Education and Teaching International*, *50*(2), pp.144-156.

Clark, S., Gioia, D., Ketchen, D. and Thomas, J., 2010. Transitional Identity as a Facilitator of Organizational Identity Change during a Merger. *Administrative Science Quarterly*, 55(3), pp.397-438.

Collins, C.J. and Smith, K.G., 2006. Knowledge exchange and combination: The role of human resource practices in the performance of high-technology firms. *Academy of management journal*, *49*(3), pp.544-560.

Colliver, J.A., 2000. Effectiveness of problem-based learning curricula: research and theory. *Academic medicine*, *75*(3), pp.259-266.

Contandriopoulos, D., Lemire, M., Denis, J.L. and Tremblay, É., 2010. Knowledge exchange processes in organizations and policy arenas: a narrative systematic review of the literature. *The Milbank Quarterly*, *88*(4), pp.444-483.

Corbin, J. and Strauss, A., 2014. *Basics of qualitative research: Techniques and procedures for developing grounded theory*. 4th ed. Thousand Oaks, CA: Sage publications.

Cowan, S., 2019. State of the Relationship. [online] National Centre for Universities & Business. Available from: http://www.ncub.co.uk/images/reports/State-of-the-Relationship-Report-2019.pdf [Accessed 2 Jan. 2020].

Darabi, F., 2016. Investigating a university business school and industry collaboration: a general analytical inductive qualitative research case [online]. *SAGE Research Methods Cases.* https://dx.doi.org/10.4135/97814462730501559595 8.

Delanty, G., 2002. The university and modernity: a history of the present. The virtual university, pp.31-48.

Devlin, M., 2020. Reconsidering university education. Again. [Blog] *The Society for Research into Higher Education*, Available at: <https://srheblog.com/2020/10/28/reconsidering-university-education-again/> [Accessed 4 November 2020].

DiCicco-Bloom, B. and Crabtree, B., 2006. The qualitative research interview. *Medical Education*, 40(4), pp.314-321.

Denzin, N.K. and Lincoln, Y.S. eds., 2011. *The Sage handbook of qualitative research*. Thousand Oaks, CA: Sage.

D'este, P. and Perkmann, M., 2011. Why do academics engage with industry? The entrepreneurial university and individual motivations. *The Journal of Technology Transfer*, *36*(3), pp.316-339.

De Rijdt, C., Dochy, F., Bamelis, S. and van der Vleuten, C., 2016. Classification of staff development programmes and effects perceived by teachers. *Innovations in education and teaching international*, *53*(2), pp.179-190.

Donate, M.J. and de Pablo, J.D.S., 2015. The role of knowledge-oriented leadership in knowledge management practices and innovation. *Journal of Business Research*, *68*(2), pp.360-370.

Dokko, G., Wilk, S.L. and Rothbard, N.P., 2009. Unpacking prior experience: How career history affects job performance. *Organization Science*, *20*(1), pp.51-68.

EDB, 2008. *The Economic Vision for Bahrain*. [online] Manama: E-Government. Available from: https://www.bahrain.bh/wps/wcm/connect/38f53f2f-9ad6-423d-9c96-2dbf17810c94/Vision%2B2030%2BEnglish%2B%28low%2Bresolution%29.pdf?MOD=AJPERES [Accessed 24 Jan. 2019].

Eisenhardt, K. M., 1989. Making Fast Strategic Decisions in High-Velocity Environments, *Academy of Management Journal, 32*(3), pp. 543-576.

Else, H., 2015. Sabbaticals: no longer so open-ended or available?. [online] Times Higher Education (THE). Available from: https://www.timeshighereducation.com/features/sabbaticals-no-longer-so-open-ended-or-available/2019616.article [Accessed 24 Jan 2020].

Emri, A., 2020. Universities explore impact of student involvement in knowledge exchange. [Blog] *UNIVERSITIES EXPLORE IMPACT OF STUDENT INVOLVEMENT IN KNOWLEDGE EXCHANGE*, Available at: <https://www.ncub.co.uk/blog/universities-explore-impact-of-student-involvement-in-knowledge-exchange> [Accessed 20 October 2020].

England, H., 2019. *Guidance on submissions (2019/01) - REF 2021*. [online] Ref.ac.uk. Available from: https://www.ref.ac.uk/publications/guidance-on-submissions-201901/ [Accessed 21 Jan. 2020].

Ermine, J.L., 2013. A knowledge value chain for knowledge management. *Journal of Knowledge & Communication Management*, *3*(2), pp.85-10.

Ermine, J.L., Moradi, M. and Brunel, S., 2012. Une chaîne de valeur de la connaissance. *Management international/International Management/Gestion Internacional*, *16*, pp.29-40.

Ernst and Young, 2012. University of the future: a thousand-year-old industry on the cusp of profound change. Australia: Ernst and Young.

Etzkowitz, H. and Zhou, C., 2017. *The triple helix: University–industry–government innovation and entrepreneurship*. Routledge.

Evans, L., 2014. Leadership for professional development and learning: enhancing our understanding of how teachers develop. ri*Cambridge journal of education*, *44*(2), pp.179-198.

Evely, A., Fazey, I., Pinard, M. and Lambin, X., 2008. The Influence of Philosophical Perspectives in Integrative Research: a Conservation Case Study in the Cairngorms National Park. *Ecology and Society*, 13(2).

Ferguson, M., 2013. Knowledge Exchange between Universities and the Creative Industries. *NEW HORIZONS IN INDUSTRY, BUSINESS AND EDUCATION*, p.215.

Fletcher, A.J., 2017. Applying critical realism in qualitative research: methodology meets method. *International journal of social research methodology*, *20*(2), pp.181-194.

Fook, J. (2006) Beyond reflective practice: reworking the "critical" in critical reflection. Keynote paper presented at Professional Lifelong Learning: beyond reflective practice, a one-day conference held at Trinity and All Saints College, Leeds, 3 July 2006

Francis-Smythe, J., Haase, S., Steele, C. and Jellis, M., 2006. Competencies and continuing professional development (CPD) for academics in knowledge exchange (KE) activity.

Fry, H., Ketteridge, S. and Marshall, S., 2008. *A handbook for teaching and learning in higher education: Enhancing academic practice*. Routledge.

Gamson, Z., Hollander, E. and Kiang, P.N., 1998. The University in Engagement with Society. *Liberal Education*, *84*(2), pp.20-25.

Garg, P. and Rastogi, R., 2006. New model of job design: motivating employees' performance. *Journal of management Development*.

Garrison, D.R., 2011. *E-learning in the 21st century: A framework for research and practice*. Taylor & Francis.

Gehman, J., Glaser, V.L., Eisenhardt, K.M., Gioia, D., Langley, A. and Corley, K.G., 2018. Finding theory–method fit: A comparison of three qualitative approaches to theory building. *Journal of Management Inquiry*, *27*(3), pp.284-300.

Gephart Jr, R.P., 2004. Qualitative research and the Academy of Management Journal. *Academy of Management Journal*, *47*(4), pp. 454-462.

General Directorate of National Qualifications Framework, 2018. *NQF Handbook*. Manama: Education and Training Quality Authority. Available from: https://www.bqa.gov.bh/En/Publications/DocLib/NQF%20Handbook%20for%20Institution%202018.pdf [Accessed, 14 Mar 20]

Gioia, D., Corley, K. and Hamilton, A., 2012. Seeking Qualitative Rigor in Inductive Research. *Organizational Research Methods*, 16(1), pp.15-31.

Glaser, B.G. and Strauss, A.L., 2017. *Discovery of grounded theory: Strategies for qualitative research*. Routledge.

Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. *Field Methods*, *18*(1), 59–82. doi:10.1177/1525822X05279903

Gonzalez, C. (2009). Conceptions of, and Approaches to, Teaching Online: A Study of Lecturers Teaching Postgraduate Distance Courses. *Higher Education*, *57*(3), 299–314. doi:10.2307/40269124

GOV.UK, 2018. Higher Education Funding Council For England Was Replaced By UK Research And Innovation And Office For Students. London: GOV.UK.

Guskey, T.R., 2000. *Evaluating professional development*. Thousand Oaks: Corwin Press.

Guskey, T.R., 2003. *Evaluating professional development*. Thousand Oaks: Corwin Press.

Guskey, T.R., 2002. Professional development and teacher change. *Teachers and teaching*, *8*(3), pp.381-391.

Hara, N., 2000. *Social construction of knowledge in professional communities of practice: Tales in courtrooms* (pp. 1-283). Indiana University.

HEA, 2017. *Higher Education Academy (HEA) extends its global network* [Online]. Available from: https://www.heacademy.ac.uk/about/news/higher-education-academy-hea-extends-its-global-network [Accessed 4 March 2020].

Higher Education Commission, 2014. National Higher Education Strategy. Manama.

HM Government, 2017. *Industrial Strategy: building a Britain fit for the future y*. London: HM. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf [Accessed 5 Mar. 2020]

Hobfoll, S.E. and Shirom, A., 2000. Conservation of resources theory. *appears in Handbook of Organizational Behavior, RT Golembiewski (ed.), Marcel Dekker, New York*, pp.57-80.

Holton III, E.F., 1996. The flawed four-level evaluation model. *Human resource development quarterly*, *7*(1), pp.5-21.

Holstein, J.A. and Gubrium, J.F., 2016. *Narrative practice and the active interview* (Vol. 67, pp. 67-82). London: Sage.

Hou, H.T., Chang, K.E. and Sung, Y.T., 2009. Using blogs as a professional development tool for teachers: Analysis of interaction behavioral patterns. *Interactive Learning Environments*, *17*(4), pp.325-340.

Hughes, A. and Kitson, M., 2012. Pathways to impact and the strategic role of universities: new evidence on the breadth and depth of university knowledge exchange in the UK and the factors constraining its development. *Cambridge journal of economics*, *36*(3), pp.723-750.

Hyslop-Margison, E.J. and Strobel, J., 2007. Constructivism and education: Misunderstandings and pedagogical implications. *The Teacher Educator*, *43*(1), pp.72-86.

Indexmundi.com. 2020. *Bahrain Age Structure - Demographics*. [online] Available from: https://www.indexmundi.com/bahrain/age_structure.html [Accessed 1 March 2020].

Iordanou, I., Hawley, R. and Iordanou, C., 2016. *Values and ethics in coaching*. Sage.

Innoget.com. 2018. University-Industry Interaction Conference 2018 By United.... [online] Available at: <https://www.innoget.com/innovation-events/567/university-industry-interaction-conference-2018-london> [Accessed 28 October 2020].

Jackson, A., 2018. REF, TEF, and KEF; and the "Research-Informed" Teaching and Co-Production Traditions in Local History: Analysing Provincial Newspapers. *International Journal of Regional and Local History*, [online] 13(1), pp.68-85. Available from: https://www.tandfonline.com/doi/full/10.1080/20514530.2018.1451447 [Accessed 1 Jan. 2020].

Joplin, L. (1995). On defining experiential education. In K. Warren, M. Sakofs, & J. Hunt (Eds.), The theory of experiential education (pp.15-22). Dubuqu, IA: Kendall/Hunt.

Jepsen, D.M. and Rodwell, J.J., 2008. Convergent interviewing: a qualitative diagnostic technique for researchers. Management research news, 31(9), pp.650-658.

Jacob, W.J., Sutin, S.E., Weidman, J.C. and Yeager, J.L. eds., 2015. *Community engagement in higher education: Policy reforms and practice*. Springer.

Jacob, W.J., Xiong, W., Ye, H., Wang, S. and Wang, X., 2019. Strategic best practices of flagship university professional development centers. *Professional Development in Education*, *45*(5), pp.801-813.

Keegan, S., 2009. *Qualitative research: Good decision making through understanding people, cultures and markets*. Kogan Page Publishers.

Khalid, F., 2017a, Transforming Strategic Outlook on Sustainability: The Case of Higher Education Institutions in the Gulf Cooperation Council (GCC) Countries, Paper presented at SEVENTH ANNUAL GULF COMPARATIVE EDUCATION SOCIETY SYMPOSIUM, Kuwait, 5/04/16 - 7/04/16 pp. 46-54. http://gces.ae/wp-content/uploads/2017/03/2016-GCES-Symposium-Proceedings.pdf

Khalid, F., 2017b. Accreditations and internationalization of the Business School Curricula. *International Journal of Higher Education Management*, *4*(1). http://www.ijhem.com/cdn/article_file/content_43430_17-08-29-01-38-53.pdf

Khalid, F., 2017c. INTELLECTUAL CAPITAL INTEGRATION FOR VALUE CO-CREATION IN HIGHER EDUCATION. *Asia Pacific Journal of Advanced Business and Social Studies*, *3*(1), pp.125-140.

Khalid, F., 2019. The Choreography of Talent Development in Higher Education. *Higher Education Studies*, *9*(1), pp.40-52.

Khomeiran, R.T., Yekta, Z.P., Kiger, A.M. and Ahmadi, F., 2006. Professional competence: factors described by nurses as influencing their development. *International Nursing Review*, *53*(1), pp. 66-72.

Kiggundu, M.N., 1981. Task interdependence and the theory of job design. *Academy of management Review*, *6*(3), pp.499-508.

Kolb, D.A., 2014. *Experiential learning: experience as the source of learning and development* Second.,

Knowles, M.S., Holton, E.F., Swanson, R.A., 1998. *The adult learner: The definitive classic in adult education and human resource development, 5th ed.*, Houston: Gulf Publishing Company.

Kolb, A.Y. and Kolb, D.A., 2009. Experiential learning theory: A dynamic, holistic approach to management learning, education and development. *The SAGE handbook of management learning, education and development*, pp.42-68.

Komba, W.L. and Nkumbi, E., 2008. Teacher professional development in Tanzania: Perceptions and practices. *Journal of international cooperation in education*, *11*(3), pp. 67-83.

Kristof-Brown, A. and Guay, R.P., 2011. Person–environment fit. In *APA handbook of industrial and organizational psychology, Vol 3: Maintaining, expanding, and contracting the organization.* American Psychological Association, pp. 3-50.

Kirkpatrick, D., 1996. Revisiting Kirkpatrick's four-level model. *Training & Development*, *50*(1), pp. 54-57.

Kirkpatrick, D. and Kirkpatrick, J., 2006. *Evaluating training programs: The four levels*. 3rd ed. San Francisco: Berrett-Koehler, p. 21.

Kellogg Commission on the Future of State, Land-Grant Universities, National Association of State Universities and Land-Grant Colleges, 1999. *Returning to our roots: The engaged institution* (Vol. 3). National Association of State Universities and Land-Grant Colleges, Office of Public Affairs.

Legard, R., Keegan, J., & Ward, K., 2003. In-depth interviews. In J. Ritchie & J. Lewis, eds. *Qualitative research practice: A guide for social science students and researchers*. London: Sage, pp. 138–169.

Leydesdorff, L. and Etzkowitz, H., 1998. The triple helix as a model for innovation studies. *Science and public policy*, *25*(3), pp.195-203.

Link, A.N., Siegel, D.S. and Bozeman, B., 2017. An empirical analysis of the propensity of academics to engage in formal university technology transfer. In *Universities and the Entrepreneurial Ecosystem*. Edward Elgar Publishing.

Lee, Y., 1996. 'Technology transfer' and the research university: a search for the boundaries of university-industry collaboration. *Research Policy*, 25(6), pp. 843-863.

Lee, S. and Moon, S., 2013. Teacher Reflection in Literacy Education--Borrowing from Bakhtin. *International Journal of Higher Education*, *2*(4), pp.157-164.

Lightowler, C. and Knight, C., 2013. Sustaining knowledge exchange and research impact in the social sciences and humanities: investing in knowledge broker roles in UK universities. *Evidence & Policy: A Journal of Research, Debate and Practice*, *9*(3), pp.317-334.

Striukova, L. and Rayna, T., 2015. University-industry knowledge exchange. *European Journal of Innovation Management*, 18(4), pp.471-492. Available from: https://doi.org/10.1108/EJIM-10-2013-0098

Lobato, J. (2012). The actor-oriented transfer perspective and its contributions to educational research and practice. *Educational Psychologist, 47*, 232–247. doi:10.1080/00461520.2012.693353

Latour, B., 1999. Pandora's hope Harvard University Press. *Cambridge MA*.

Lawson, C., Hughes, A., Salter, A., Kitson, M., Bullock, A. and Hughes, R., 2016. Knowledge Exchange in UK Universities: Results from a Panel of Academics 2005-2015. London: NCUB

Lewis, J. and Ritchie, J., 2003. Generalising from qualitative research. *Qualitative research practice: A guide for social science students and researchers*, *2*, pp.347-362.

Mosey, S. and Wright, M., 2007. From human capital to social capital: A longitudinal study of technology–based academic entrepreneurs. *Entrepreneurship theory and practice*, *31*(6), pp.909-935.

McMillan Group, 2016. *University Knowledge Exchange (KE) Framework: good practice in technology transfer*. [online] HEFCE. Available from: https://dera.ioe.ac.uk/27123/1/2016_ketech.pdf [Accessed 6 Dec. 2019].

McMillan, T., 2020. *About* |. [online] Keconcordat.ac.uk. Available at: <https://www.keconcordat.ac.uk/about/> [Accessed 20 October 2020].

Marshall, J. (2019). Universities can work with businesses to regenerate left-behind Britain. [Blog] *National Centre for Universities and Business*. Available at: http://www.ncub.co.uk/blog/universities-can-work-with-businesses-to-regenerate-left-behind-britain [Accessed 6 Nov. 2019].

Maxwell, J., 1992. *Understanding and validity in qualitative research*. Harvard educational review, 62(3), pp.279-301.

Maxwell, J.A., 2012. *Qualitative research design: An interactive approach* (Vol. 41). Sage publications.

Mehorter, B. R., 2017. 'Enabling change: How one school implemented and adapted action learning as a form of teacher professional development for over a decade', ALAR Journal, 23(2), pp. 51–70. Available at: https://search-ebscohost-com.ezproxy1.bath.ac.uk/login.aspx?direct=true&db=eue&AN=127254784&site=ehost-live (Accessed: 7 March 2019).

Marginson, S. and Rhoades, G., 2002. Beyond national states, markets, and systems of higher education: A glonacal agency heuristic. *Higher education*, *43*(3), pp.281-309.

Mabey, C. and Thomson, A.W.J., 2001. *The learning manager: A survey of management attitudes to training and development at the millennium*. Institute of Management.

Maxwell, J., 1992. Understanding and validity in qualitative research. *Harvard educational review*, *62*(3), pp.279-301.

Moran, P. and Ghoshal, S., 1996, August. VALUE CREATION BY FIRMS. In *Academy of Management Proceedings* (Vol. 1996, No. 1, pp. 41-45). Briarcliff Manor, NY 10510: Academy of Management.

Moon, J., 2004. *A Handbook of Reflective and Experiential Learning: Theory and Practice* London: Routledge Falmer.

Moon, J. A., 2000. *Reflection in Learning and Professional Development*. London: Kogan Page

Morgan, D., 2015. *What are the Grounded Theory Methodology approaches?*. [online] ResearchGate. Available from: https://www.researchgate.net/post/What_are_the_Grounded_Theory_Methodology_approaches [Accessed 17 Mar. 2020].

Malouf, D., 2003. *How to teach adults in a fun and exciting way*. 2nd ed. Crows Nest, NSW, Australia: Allen & Unwin.

McMillan, T., 2019. [online] Universitiesuk.ac.uk. Available from: https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2019/knowledge-exchange-concordat-consultation.pdf [Accessed 26 Nov. 2019].

Muijs, D. and Reynolds, D., 2017. *Effective teaching: Evidence and practice*. Sage.

Nahapiet, J., & Ghoshal, S. 1998. Social capital, intellectual capital, and the organizational advantage. Academy of Management Review, 23: 242–266.

Ncub.co.uk. 2013. NCUB | National Centre For Universities & Business. [online] Available at: <https://www.ncub.co.uk/> [Accessed 28 October 2020].

Opfer, V.D. and Pedder, D., 2011. Conceptualizing teacher professional learning. *Review of educational research*, *81*(3), pp.376-407.

O'Leary, Z., 2007. Deductive/inductive reasoning. *The Social Science Jargon Buster. London: Sage Publications Ltd*.

O'Mahoney, J. and Vincent, S, 2014. Critical Realism as an Empirical Project. In: P.K. Edwards, J. O'Mahoney, and S. Vincent, *Studying Organisations Using Critical Realism: A Practical Guide*, ed. Oxford: Oxford University Press, pp. 1-20.

Paavola, S. and Hakkarainen, K., 2005. The knowledge creation metaphor–An emergent epistemological approach to learning. *Science & education*, *14*(6), pp.535-557.

Pan, Y., Xu, Y., Wang, X., Zhang, C., Ling, H. and Lin, J., 2015. Integrating social networking support for dyadic knowledge exchange: A study in a virtual community of practice. *Information & Management*, 52(1), pp.61-70.

Patton, M. Q., 2002. *Qualitative research and evaluation methods*. 3rd ed. Thousand Oaks,CA: Sage.

Patton, M. Q., 2014. *Qualitative research & evaluation methods: Integrating theory and practice.* 4th ed. Thousand Oaks, CA: Sage.

Pedler, M., Burgoyne, J. and Brook, C., 2005. What has action learning learned to become?. *Action Learning: Research and Practice*, *2*(1), pp.49-68.

Perkmann and Walsh, 2006. Relationship-based university industry links and open innovation: towards a research agenda. AIM Research Working Paper Series 041

Perkmann, M., Tartari, V., McKelvey, M., Autio, E., Broström, A., D'Este, P., Fini, R., Geuna, A., Grimaldi, R., Hughes, A. and Krabel, S., 2013. Academic engagement and commercialisation: A review of the literature on university–industry relations. *Research policy*, *42*(2), pp.423-442.

Polanyi, M., 1969. *Knowing and Being: Essays: Ed by Marjorie Grene*. Chicago: The University of Chicago Press.

Potgieter, I., Coetzee, M. and Basson, J., 2011. Management competencies for the development of heads of department in the higher education context: a literature overview. *South African Journal of Labour Relations*, *35*(1), pp.81-103.

Ponterotto, J. G. (2005). Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science. *Journal of Counseling Psychology, 52*(2), 126-136. doi:10.1037/0022-0167.52.2.126

Popkewitz, T.S. ed., 2000. *Educational knowledge: Changing relationships between the state, civil society, and the educational community*. SUNY Press.

Praxisauril.org.uk. 2020. *Leading Lights In Knowledge Exchange Celebrated For Contribution To UK Innovation | Praxisauril.Org.Uk*. [online] Available at: <https://www.praxisauril.org.uk/news-policy/news/leading-lights-knowledge-exchange-celebrated-contribution-uk-innovation> [Accessed 20 October 2020].

Putnam, R., & Borko, H. (2000). What do new views of knowledge and thinking have to say about research on teacher learning? Educational Researcher, 29(1), 4–15.

Rajalo, S. and Vadi, M., 2017. University-industry innovation collaboration: Reconceptualization. *Technovation*, *62*, pp. 42-54.

Rayna, T. and Striukova, L., 2015. University-industry knowledge exchange: An exploratory study of Open Innovation in UK universities. *European Journal of Innovation Management*, *18*(4), pp.471-492.

Rapley, T., 2011. Some pragmatics of data analysis. In: Silverman, D. (Ed.), *Qualitative Research*. 3rd ed. London: SAGE Publications Ltd.

Research England, 2019. *Knowledge Exchange Framework Consultation*. Research England, p.18. Available from: https://re.ukri.org/documents/2019/kef-consultation/ [Accessed 2 Jan. 2020].

Revans, R., 2012. *ABC of Action Learning*. Gower Publishing, Ltd.

Reichert, S., 2019. *The Role of Universities in Regional Innovation Ecosystems*. [online] Belgium: European University Association asbl. Available from: https://www.eua.eu/downloads/publications/eua%20innovation%20ecosystem%20report_final_digital.pdf [Accessed 6 Nov. 2019].

Re.ukri.org. 2018. *Summary of KEF call for evidence responses*. [online] Available at: https://re.ukri.org/documents/2018/overview-of-kef-call-for-evidence-responses/ [Accessed 14 Nov. 2019].

Re.ukri.org. 2020. Knowledge Exchange - Research England. [online] Available at: <https://re.ukri.org/knowledge-exchange/> [Accessed 20 October 2020].

Rienties, B., Brouwer, N. and Lygo-Baker, S., 2013. The effects of online professional development on higher education teachers' beliefs and intentions towards learning facilitation and technology. *Teaching and teacher education*, *29*, pp.122-131.

Roscoe, J., 2002. Continuing professional development in higher education. *Human Resource Development International*, *5*(1), pp.3-9.

RSM PACEC Ltd, 2017. *The state of the English university knowledge exchange landscape*. [online] HEFCE, p.49. Available from: https://www.praxisauril.org.uk/sites/praxisunico.org.uk/files/PACEC%20HEIF%20strategy%20evaluation_2017.pdf [Accessed 3 Feb. 2020].

Scribner, J.P., 1999. Professional development: Untangling the influence of work context on teacher learning. *Educational Administration Quarterly*, *35*(2), pp.238-266.

Schartinger D, Rammer C, Fischer MM, et al. (2002) Knowledge interactions between universities and industry in Austria: sectoral patterns and determinants. Research Policy 31(3): 303– 328.

Schön, D. A. (1991) *The Reflective Turn: Case Studies In and On Educational Practice*, New York: Teachers Press, Columbia University.

Schön, D. A. (1991) *The Reflective Turn: Case Studies In and On Educational Practice*, New York: Teachers Press, Columbia University.

Schulz, K. (2005) 'Learning in complex organisations as practicing and reflecting: A model development and application from a theory of practice perspective', *Journal of Workplace Learning*, 17 (8), 493-507.

Schwandt, T.A., 1994. Constructivist, interpretivist approaches to human inquiry. Handbook of qualitative research, 1, pp.118-137.

Scott, D.; Brown, A.; Lunt, I., and Thorne, L., (2004) Professional Doctorates: Integrating Professional and Academic Knowledge Milton Keynes: Open University Press.

Sengupta, A. and Ray, A.S., 2017. University research and knowledge transfer: A dynamic view of ambidexterity in British universities. *Research Policy*, *46*(5), pp.881-897.

Shagrir, L., 2017. Collaborating with colleagues for the sake of academic and professional development in higher education. *International Journal for Academic Development*, *22*(4), pp.331-342.

Sheng, M.L. and Hartono, R., 2015. An exploratory study of knowledge creation and sharing in online community: a social capital perspective. *Total Quality Management & Business Excellence,* 26(1), pp. 93-107.

Soliman, J.A. and Kan, M.M., 2004. Grounded theory and NVivo: wars and wins. In *International Conference on Qualitative Research in IT & IT in Qualitative Research*. QualIT2004. https://opus.lib.uts.edu.au/bitstream/10453/7157/1/2004001837.pdf

Srinivasan, M., Liederman, E., Baluyot, N. and Jacoby, R., 2006. Saving time, improving satisfaction: the impact of a digital radiology system on physician workflow and system efficiency. *Journal of Healthcare Information Management*, *20*(2), p.123.

Stewart, J. and Rigg, C., 2011. *Learning and talent development*. Kogan Page Publishers.

Strauss, A. and Corbin, J., 1998. *Basics of qualitative research techniques*. Thousand Oaks, CA: Sage publications.

Suri, H., 2011. Purposeful sampling in qualitative research synthesis. *Qualitative research journal*, *11*(2), pp.63-75.

Sutherland, K., 2018. Holistic academic development: Is it time to think more broadly about the academic development project?. *International Journal for Academic Development*, 23(4), pp.261-273.

Sutherland, K. and Hall, M., 2018. The 'impact' of academic development. *International Journal for Academic Development*, 23(2), pp.69-71.

Trakman, L., 2008. Modelling university governance. *Higher Education Quarterly*, *62*(1-2), pp.63-83.

Turner, N., Wuetherick, B. and Healey, M., 2008. International perspectives on student awareness, experiences and perceptions of research: Implications for academic developers in implementing research-based teaching and learning. *International journal for academic development*, *13*(3), pp.199-211.

Ulrichsen, T., 2018. *Knowledge Exchange Framework Metrics: A Cluster Analysis of Higher Education Institutions*. [online] Re.ukri.org. Available from: https://re.ukri.org/documents/2018/kef-cluster-analysis-report [Accessed 4 Jan. 2020].

Ungemah, J., 2015. *Misplaced talent : a guide to making better people decisions*, Hoboken: Wiley.

University of Bath, 2017. *Code of good practice in research integrity*. [online] Bath.ac.uk. Available from: https://www.bath.ac.uk/corporate-information/code-of-good-practice-in-research-integrity/ [Accessed 25 Jun. 2019].

University of Bath, n.d. *Definition of research integrity*. [online] Bath.ac.uk. Available from: https://www.bath.ac.uk/corporate-information/definition-of-research-integrity/ [Accessed 20 Aug. 2019].

Universities UK, 2019. *Concordat for the advancement of Knowledge Exchange in Higher Education in England*. London. https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Pages/knowledge-exchange-concordat-consultation.aspx , [Accessed 2 Jan.2020]

Universitiesuk.ac.uk, 2020. *Funding*. [online] Available from: https://www.universitiesuk.ac.uk/policy-and-analysis/Pages/funding.aspx [Accessed 15 Jan. 2020].

University of Strathclyde, n.d, HEA Fellowship Recognition at Strathclyde [Online]. Available from: https://www.strath.ac.uk/hr/learninganddevelopment/spark/heafellowshiprecognitionatstrathclyde/ [Accessed 4 March 2020].

Van Maanen, J., 1979. The fact of fiction in organizational ethnography. *Administrative science quarterly*, *24*(4), pp.539-550.

Van der Sluis, H., Burden, P. and Huet, I., 2017. Retrospection and reflection: The emerging influence of an institutional professional recognition scheme on professional development and academic practice in a UK university. *Innovations in Education and Teaching International*, *54*(2), pp.126-134.

Viskovic, A.R., 2005. 'Community of practice'as a framework for supporting tertiary teachers' informal workplace learning. *Journal of Vocational Education and Training*, *57*(3), pp.389-410.

Wanberg, C.R., Welsh, E.T. and Hezlett, S.A., 2003. Mentoring research: A review and dynamic process model.

Wang, Kaiqing & Wang, Yijie, 2018. Person-Environment Fit and Employee Creativity: The Moderating Role of Multicultural Experience. *Frontiers in psychology*, 9, p.1980.

Wheelahan, L. 2008. An analysis of vocational qualifications in Australian tertiary education: How do they mediate access to knowledge? Paper presented at the 5th International Basil Bernstein

Symposium, University of Cardiff, July 9–12. Wheelahan, L. 2010. Why knowledge matters in curriculum. A social realist argument. London: Routledge.

Wilkinson, A. & Johnstone, S., 2016. *Encyclopedia of human resource management*, Cheltenham, England ; Northampton, Massachusetts: Edward Elgar Publishing.

Winter, R. and Sarros, J., 2002. The Academic Work Environment in Australian Universities: A motivating place to work?. *Higher Education Research & Development*, 21(3), pp.241-258.

Wolraich, M., Dworkin, P., Drotar, D. and Perrin, E., 2007. *Developmental-Behavioral Pediatrics*. London: Elsevier Health Sciences.

World Economic Forum, 2016. *The Future of Jobs*. [online] Available from: http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf [Accessed 24 Sep. 2019].

Worldometer, 2020. *Population Of Bahrain (2020 And Historical)*. [online] Available from: https://www.worldometers.info/world-population/bahrain-population [Accessed 11 March 2020].

Xanthopoulou, D., Bakker, A.B., Demerouti, E. and Schaufeli, W.B., 2009. Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational behavior*, *74*(3), pp.235-244.

Young, O.R. and Gasser, L., 2002. *The institutional dimensions of environmental change: fit, interplay, and scale*. MIT press.

Yu, Y., Chen, Y. and Shi, Q., 2018. Big Five Personality Traits and Knowledge Flow in University-Industry Collaborative Innovation. In *Strategy and Performance of Knowledge Flow* (pp. 49-69). Springer, Cham. https://doi-org.ezproxy1.bath.ac.uk/10.1007/978-3-319-77926-3_4

Zavale, N.C. and Macamo, E., 2016. How and what knowledge do universities and academics transfer to industry in African low-income countries? Evidence from the stage of university-industry linkages in Mozambique. *International Journal of Educational Development*, *49*, pp.247-261.

Zhang, Q., 2018. Theory, practice and policy: A longitudinal study of university knowledge exchange in the UK. *Industry and Higher Education*, *32*(2), pp.80-92.

Appendix:

I. Personal reflections/my journey:

I was excited and anxious about my thesis from the very beginning of the DBA programme. Every time I visited University of Bath, I would visualize myself saying the final goodbye with a big smile of contentment and achievement. This excitement and drive for completing the study was also accompanied with anxiousness because of my personal and professional constraints that I imagined would inhibit me in completing the study within four years' time, a timeframe I gave to myself. However, as the time progressed, I started to enjoy my learning on the programme and by the time, I have reached this stage, I feel achieving a lot more than the qualification.

The most memorable and enriched phase of my study was the data collection as it allowed me to learn and develop my interviewing skills, as well as getting to know experts in the field. I had to interview participants from Bahrain and UK, most of them I had never known before. Although I prepared a standard interview guide and a basic interviewing structure, I did not want to sound like a robot, programmed to utter a few questions and record responses. I wanted the interviews to be an engaging interaction where participants also leave with a joyful reflective experience. After every interview, I would reflect and analyze my interviewing and would incorporate new learning into the practice. I learned to be an empathetic listener, I learned how adapting interviewing style to participants' personality can help us get the best out of the interview experience. Although, I was conscious on avoiding interruption and argument, keeping the conversation interactive, lively and paced, helped participants to reflect and engage with their deep memories and share their reflective practices. One of the participants said, "You took me fifteen years back, Fahdia". The participants, often mentioned developments over the past years, shared how things have changed and other responses that were aligned to my interviewing aims. Such answers enlightened my discovery and guided my journey from data to theory.

My study also gave me the opportunity to meet and learn from people who I would have never met otherwise. Although my study relates to HE of UK and Bahrain, I contacted experts from Asia and Europe, that helped me develop flexibility and versatility in my inquiry on the topic. For such interactions I used LinkedIn and Skype; following different time zones, I learned that interacting with people on social media, is a delicate blend of formal and informal communication that must be dealt carefully to achieve your learning goals. I learned and applied cross-culture communication antiquates which was a learning experience on its own.

Along with the opportunity to enhance my competencies as a researcher, my journey has developed my interest in various areas of Higher Education Management, that I would be interested to investigate in future. One such area is, sustainability and sustainable development that is a relatively newer concept in Bahrain. I was amazed by eco-friendly interventions introduced in University of Bath, around the

campus, that can be introduced to other institutions, around the world, sharing knowledge and best practices.

II. Interview Guide:

Interview Guide- University Industry Knowledge Exchange and Academics' Professional Development.
Fahdia Khalid-Doctorate of Business Administration (Higher Education Management), University of Bath, Bath,UK.

Opening the interview/ consent:

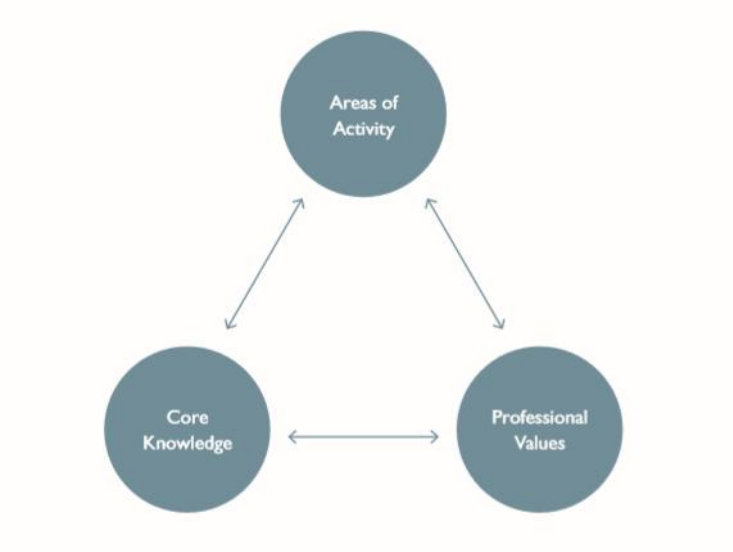
Thank you for accepting my request to interview you. The aim of my research is to learn about the university-industry knowledge exchange (KE) as a professional development (PD) opportunity. The questions are designed on HEA-fellowship framework for teaching and supporting learning in higher education; i.e., core knowledge, areas of activity and professional values.

The interview will be divided in three parts, in first part I would like to learn about your perspective on professional development for academics in higher education. In the second part, I would like to understand the university industry knowledge exchange activities, that you have been a part of and finally, I would like to learn your opinion on KE as a means of PD.

[the institutional and personal identities will be kept anonymous]

The interview questions are designed to evaluate the impact of university-industry collaboration activities on the professional practice of academics. The underpinning frame work to design the questions is inspired by HEA Professional Standards Framework, 2011.

The three key areas are (areas of activity A, core knowledge K, professional values V).



HEA-framework for teaching and supporting learning in higher education

<Page break>

Starts Here:

In my research, I need to write a profile/description of participants, for which I will appreciate if you could introduce yourself and talk about your career, so far.

<…no of years, interaction with industry, subject field, current job responsibilities etc...>

Thank you so much, let's begin with first part of the interview, which is about professional development for academics.

1. If you could first share your perspective on professional development for academics?
2. What kinds of professional development activities you have got and how?
3. What kind of professional development activities you would like to have?
4. Based on your experience, what PD activities you don't consider valuable?

Now I would like to inquire about your interaction with industry and its impact on your academic practices.

1. so, what in your opinion, university-industry knowledge exchange is about?
2. Why in your opinion, interaction with industry is important for academics, if so?
3. If you could elaborate on industry collaboration, you have been involved in?
4. Can you share the details, of the project that you personally feel most attached to/ often recall; why so?
5. Reflecting on your participation in such activities, what do you think you learned?

6. How, in your opinion, it has informed your academic practices, and how?
   [course development/design, assessment design, in-class teaching, insight into the subject, professional values]

Third part:

1. What are the challenges, from academic management point of you, in enhancing academics' interaction with industry?
2. Do you have any suggestions on how provision of professional development can benefit from using University Industry -Knowledge exchange?